

# *e-Perspectives*

*on the Medical Transcription Profession*

*December 2008*

*Issue 56*

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# e-Perspectives

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## Where Your Treasure Is

For where your treasure is, there will your heart be also (Matthew 6:19). I've been thinking a lot lately about where *my treasure* is. It's not just an idle thought these days, when so much has been shaken up in our businesses, families, and everyday life. The economic crisis has touched most of us in some way or in many ways, depending on our circumstances, and it can't help but make us wonder what really matters in our lives and why.

Anyone in business today has to wonder where we are going financially and how we will handle the journey. What resources do we have to protect ourselves and those we care about? The belief that "All we have to fear is fear itself" doesn't reassure me at all. Fear is a driving force in the daily lives of many people I know and read about and see on TV or hear about from others. Fear can immobilize us and keep us from thinking positively and creatively. On the other hand, it motivates some to be innovative and entrepreneurial.

What do our colleagues, customers, employers, families (fill in the blank) need to help them be successful in these difficult times, and what can I do to meet their needs? That's the standard question for every entrepreneur: find what the market needs and find a way to meet the need.

I've never considered myself a particularly entrepreneurial person. I don't like risk-taking and I don't like surprises or uncertainty. Yet everything I have ever done (with great personal and professional effort) has actually been highly risky and the outcome or success highly uncertain. What keeps me (and all my friends and family) going is a healthy balance of optimism and realism. Our hearts are in our work and our families, and therein lies our treasure.

This holiday season comes in a time of great uncertainty throughout the world. It's a time for us to focus on what's important and to look beyond ourselves to share with those less fortunate than we.

Among the many things I am grateful for is *e-Perspectives* magazine. It's been a vehicle for publishing fine articles and announcing the products of research and development in the medical transcription profession for the past 18 years. Without it and its predecessor, readers would have been deprived of the contributions they have made to the medical transcription profession and industry.

Our feature article in this issue is Dr. Dirckx's "Guy Talk: Perspectives on Selected Topics in Andriatics"—in short, men's health, primarily urologic health. Health concerns unique to men account for many of the medical and surgical reports and procedures that medical transcriptionists encounter in their work. A shorter informative article from Dr. Dirckx is "Negative Pressure Wound Therapy." He describes various wound therapy treatments that are refinements of existing knowledge and techniques.

A special treat in this issue is a new column from a favorite author of many of us—Judith Zielinski Marshall. "Check Mates" is a tribute to her husband Stuart, who died last year after many illnesses. We will all miss him, and we are glad to have Judith's columns back.

Ellen Drake's "Interpreting Medical Language" essay provides a greater understanding of the interpretation and decision-making process used in quality medical transcription. She compares and contrasts MTs with foreign language interpreters and shows how important it is for a medical transcriptionist to have a rich and varied knowledge of both English and foreign languages as well as medical language.

In this issue Rich Lederer entertains and informs us with his "World's Toughest Grammar Test" consisting of four challenging questions. "What's New in Medicine" rounds out the issue with four pages of new, difficult, and hard-to-find terms.



Sally C. Pitman

**New!**

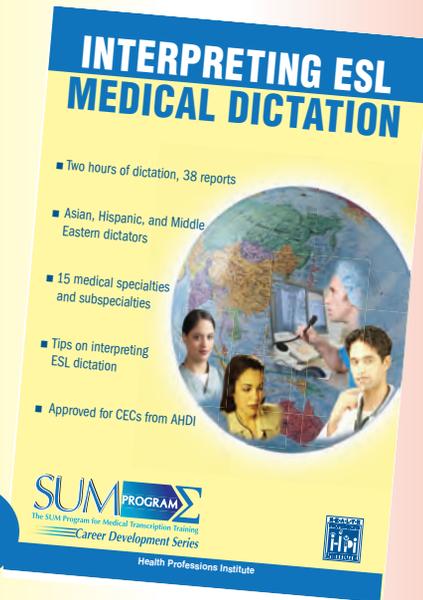
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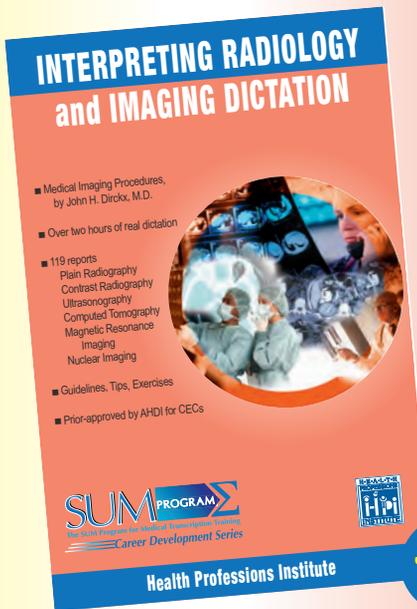
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# Interpreting Medical Language

by Ellen Drake, CMT, AHDI-F

Some people have compared transcribing medical dictation to translating or interpreting a foreign language. Let's compare and contrast medical transcriptionists with foreign language interpreters. First, we need to know the difference between a translator and an interpreter. At the most basic level, an interpreter translates oral language while a translator works with written text. It is a given that both interpreting and translating require a certain love of language and deep knowledge of the subject. Translators must be able to write well and express themselves clearly in the target language.

A love of language and the need for a deep knowledge of the subject are definite similarities. Medical transcriptionists (MTs) aren't required to write much, but being able to write well and express themselves clearly is certainly a skill that contributes to being a good transcriptionist.

[Interpreters must also] understand the source language and the culture of the country where the text originated [context]. A good library of dictionaries and reference materials helps them render that material into the target language.<sup>1</sup>

Understanding the source language [medicine] of the country where the text [dictation] originated is analogous to the need to pay attention to the context of a medical report in order to choose words with the correct meaning. This is not as easy as it might appear as there are many homophonic (soundalike) and near-homophonic terms in medical language. Being familiar with the language habits of dictators for whom English is a second-language is also a valuable skill.<sup>2</sup> Although the Internet has become an invaluable resource, many practitioners still pride themselves on the extent and quality of their reference library.

There are two types of interpreting: consecutive and simultaneous. Strictly speaking, "simultaneous" is a misnomer: the interpreter can't start interpreting until she understands the general meaning of the sentence. Depending on how far into the sentence the subject and the verb are located, the interpreter into English may not be able to utter a single word until she hears the very end of the sentence in the source language! This should make it evident how hard the task of the interpreter really is: she needs to be translating the sentence into the target language while simultaneously listening to and comprehending the next sentence.<sup>3</sup>

Listening ahead and translating the previous sentence at the same time is very similar to what experienced MTs do. If anything, what an MT does is even more complex. With experience, MTs learn to listen ahead (although, it's usually a phrase or two, not an entire sentence) in order to understand context, anticipating the dictator's next words while transcribing what they just heard and proofreading what they just transcribed. It's almost as though the brain has to be partitioned to do several things at one time, but each partition must be connected to the other to maintain understanding. Beyond this point, the analogy between MTs and interpreters breaks down.

MTs learn to constantly analyze the structure of the dictation as well as meaning, inserting punctuation "on the fly," correcting grammar and usage errors, and organizing the dictation into appropriate formats and paragraphs. On top of this, MTs must coordinate the sense of hearing with the action of their fingers on the keyboard and operate a foot pedal, all at the same time. So transcribing is an intense mental process combined with hearing acuity, physical dexterity, and coordination. These skills do not come naturally to most people. With experience however, these skills become transparent and appear effortless. Experienced MTs call this being "in the zone."

One of the key skills of the simultaneous interpreter is decisiveness.<sup>4</sup>

Obviously, interpreters can't hesitate in translating speech, and that doesn't apply to medical transcription. MTs can and do hesitate—to back up and relisten, consult a reference, make corrections. However, MTs must be decisive in a different way. The process of transcription involves constant decision-making: Is it this word or that? Does the word start with a *p*, *t*, or *d*? Is the dictator saying 15 or 50? Is this a compound sentence or not? The decisions are constant, requiring concentration, alertness, and focus. MTs must have a deep knowledge of medical language—human body systems, medical specialties, pharmacology, diagnostic procedures, and operative procedures—and a thorough understanding of English language grammar and punctuation to skillfully and quickly transcribe dictation that changes in content and dictation style from one report to the next. Experienced MTs do most of their proofreading on-screen while transcribing, proofreading as a separate step only for a new or difficult dictator or unfamiliar content. In other words, it's not enough to know the vocabulary; the MT must

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***Rather than transcribe word by word (that's very inefficient), you must listen, think, and interpret phrases and sentences as they function in a cohesive whole.***

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thoroughly understand the subject matter, as do translators and interpreters, in order to make good decisions in fractions of a second.

Translation . . . is a matter of understanding the thought expressed in one language and then explaining it using the resources of another language. In other words, what an interpreter does is change words into meaning, and then change meaning back into words—of a different language. And just as you can't explain to someone a thought if you didn't fully understand that thought, nor can you translate or interpret something without mastery of the subject matter being relayed.<sup>5</sup>

No, MTs don't change medical language into another language, but if you don't understand the thoughts expressed, you cannot be certain that you are correctly transcribing the words you are hearing. A good exercise to demonstrate that kind of necessary understanding is to explain in lay terms what the dictator means.

Interpreters are comprehension specialists. And they have to be because of the time constraints they work under. In order to work time-efficiently, they will actively construct the possible underlying representation of the surface structure of a phrase, sentence, and statement rather than analyze the potential meanings of the surface structure items.<sup>6</sup>

In a sense, this very much describes the process of medical transcription. Rather than transcribe word by word (that's very inefficient), you must listen, think, and interpret phrases and sentences as they function in a cohesive whole. On the job, MTs work under sometimes very restrictive time constraints. If paid by production it's tempting to sacrifice accuracy for quantity, but knowledgeable, proficient MTs combine speed and accuracy.

A well-versed MT has a large English as well as medical vocabulary. In addition, you should know enough about other languages to recognize that a word may be German, Spanish, French, etc. In my 40 years in medical transcription, I have actually transcribed words like *zeitgeist* (G., spirit of the ages), *weltschmerz* (G., world sorrow), *ängst* ("ängkst" G., anxiety associated with depression), *sangfroid* ("sahn-frwa" Fr., indifference), *déjà vu* ("day-zha voo" Fr., the sensation of having already seen something new), and *la belle indifférence* ("lah bell ain-deef-erahnns" or

possibly "een-deef..." Fr., an inappropriate lack of emotion or concern).<sup>7</sup> Psychiatrists seem to love French and German words!

Words from all sorts of disciplines find their way into medical transcription; for example, from astronomy, waxing and waning (a term applied to phases of the moon as well as to symptoms of a disease); from botany, *bougainvillea* (a lovely flowering, thorny vine); from religion, *mazel tov* (Hebrew or Yiddish for congratulations), *bris* (the Jewish circumcision ceremony), *bat and bar mitzvah* (Jewish coming-of-age celebration), *Kwansaa* (African holiday celebrated around Christmas time); culinary terms, *gefilte fish* (fish balls made with ground fish, matzo meal, and eggs, cooked in fish broth) and *fugu* (poisonous puffer fish served in Japanese restaurants). Would you recognize the terms *Pilates* (a popular stretching and exercise routine) or *Tai Chi* and *Qigong* (Japanese exercise regimens) if you *heard* them? Would you be able to spell the yummy flaky pastry, *croissant*, if you heard it pronounced the French way ("krwah-sah"?)

References to classic literature, the opera, popular movies, national leaders, actors, and authors also find their way into medical dictation. A well-read but, sadly, paranoid schizophrenic reported that his actions were being controlled by a *deus ex machina*. Plastic surgery patients want to look like Jennifer Aniston, Pamela Lee, or Heidi Klum. Psychiatric patients stalk famous figures and are sometimes obsessed with religious symbols and ideas. They may think they're from another planet in another galaxy or being controlled by aliens; they'll use planet and galaxy names from science fiction movies and novels. Children imitate behaviors they see on "reality" television shows and in computer games, sometimes with disastrous results.

Geographical regions and nationalities pop up too. Do you know how to spell Albuquerque, Cincinnati, Minneapolis, Ashkenazi (eastern European Yiddish-speaking Jews), Chiricahua (an American Indian tribe), Herzegovina (a small country in southeastern Europe), Bala Buluk in Afghanistan, Sikh (a language and ethnic group in the Punjab region between Pakistan and India)? Because of globalization of the economy, tourism, and charitable medical ventures into third world countries, you may hear the name of practically any city or country in the world. Is a current atlas one of your reference books?

All these terms and more appear in medical dictation. Do you get odd words like this every day? Perhaps not. But you can see that it pays to be well-read and acquainted with many cultures and many disciplines of study.

To summarize the qualifications of a good interpreter [or medical transcriptionist], they are:

- Knowledge of the general subject.
- General erudition in areas of religion, world cultures, literature, other languages.
- Extensive vocabulary and intimate familiarity with both English and medical language.

- Ability to express thoughts clearly and concisely in both languages.

A “good ear” is not enough for today’s transcriptionist. While we sometimes isolate ourselves physically by working at home or in cubicles, we must not isolate ourselves intellectually. In order to be good interpreters of medical language, we must immerse ourselves in the content and nuances of the dictations, and we must be good *critical thinkers and problem solvers*. And that is the subject of my next article!

For further insight into the process of interpreting medical dictation, read “Dictation and Transcription: Adventures in Thought Transference” and “Pronounced Differences,” both by John H. Dirckx, M.D., available as a free download at the HPI Web site: <http://www.hpisum.com>

## References

<sup>1</sup>Klaus G.E. Baumann, “What does an Interpreter do?” US Coast Guard Auxiliary web publication. <http://cgwebs.net/interpreter/images/What-does-an-Interpreter-do-IC-Promo-AUG-03.pdf>

<sup>2</sup>See “Interpreting ESL Dictation” ad in this issue.

<sup>3</sup>Baumann.

<sup>4</sup>Baumann.

<sup>5</sup>Baumann.

<sup>6</sup>Hoenig, “Do Interpreters Make Sense?” [http://www.gesis.org/Mitarbeiter/zuma/harkness/csdi/presentations\\_2003/Hoenig\\_ESS\\_Bruessel\\_Folien\\_2003.pdf](http://www.gesis.org/Mitarbeiter/zuma/harkness/csdi/presentations_2003/Hoenig_ESS_Bruessel_Folien_2003.pdf)

<sup>7</sup>In French pronunciations, the superscripted letters are barely pronounced and sometimes impossible to hear.

**Ellen Drake**, CMT, FAAMT, is Development Editor for Health Professions Institute. She is also coauthor of the annual *Saunders Pharmaceutical Word Book*. She is a former medical transcription service owner, instructor, and practitioner with many years in the industry and has contributed to many medical transcription education and reference books. E-mail: [jehu54110@mypacks.net](mailto:jehu54110@mypacks.net).



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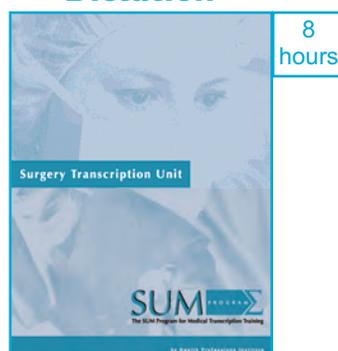
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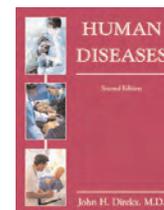
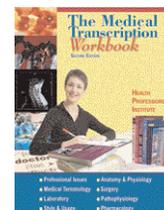
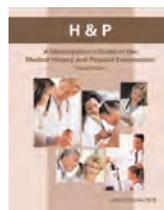
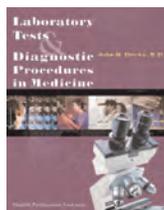
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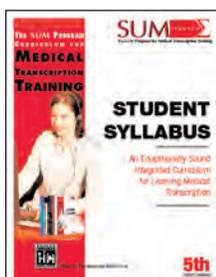
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# Guy Talk: Perspectives on Selected Topics in Andriatrics

by John H. Dirckx, M.D.

**E**ven though you may never have seen or heard the word before, you've probably already figured out that andriatrics is a branch of medicine concerned with men's health, a sort of male complement to the more familiar specialty of gynecology. As far as I know, there are no residency programs in andriatrics, and there is certainly no specialty board in the field. But a growing number of U.S. physicians specialize in health concerns unique to men, and some limit their practices to the treatment of gay men.

Urology is a surgical specialty that focuses on the diagnosis and treatment of disorders of the urinary tract. Although more than half of most urologists' patients are women, the urologist has traditionally treated disorders of the male reproductive system. This article discusses some common andriatric/urologic problems.

First, a brief review of male reproductive anatomy. The testicles produce both sperm (reproductive cells capable of fertilizing a female oocyte) and testosterone (a hormone that initiates and maintains secondary sexual characteristics such as male physique, facial and body hair growth, and deeper voice). Each testicle is suspended within the scrotum by a spermatic cord, a complex structure containing smooth muscle, connective tissue, blood vessels, nerves, lymphatics, and the spermatic duct (vas deferens), which conducts sperm to the prostate gland.

The male urethra runs from the bladder to the tip of the penis to carry urine outside the body and also serves as a channel for the ejaculation of semen. The prostate—the word is frequently mispronounced “prostrate” by the laity—is a structure about the size of a walnut that surrounds the urethra just below the neck of the bladder. Both the prostate and the seminal vesicles (small sac-like glands adjacent to the spermatic duct) produce a fluid secretion that contributes to the composition of semen. Smooth muscle fibers in the prostate contract at the time of ejaculation, preventing retrograde flow of semen into the bladder.

Disorders of the prostate (benign hyperplasia and adenocarcinoma) account for a high proportion of visits to urologists by men over 50. **Benign prostatic hyperplasia (BPH)** is an overgrowth of androgen-sensitive glandular tissue that normally accompanies aging. The disorder may remain asymptomatic for years, but most elderly men eventually experience both irritative and mechanical effects. Irritative symptoms

result from a heightened sensitivity in the neck of the bladder and prostatic urethra, and include pollakiuria (increased urinary frequency), urgency, nocturia (the need to get up one or more times at night to urinate), and burning or stinging on urination.

Mechanical symptoms arise from distortion of urethral anatomy by prostatic swelling. Compression of the urethra causes hesitancy (difficulty in starting urination), reduction in the force and volume of the urinary stream, inadequate emptying of the bladder, and difficulty in stopping urination (post-voiding dribbling). Recurrent failure to empty the bladder completely can lead to chronic distention and overflow incontinence. Occasionally the presenting symptom of BPH is acute urinary retention, requiring prompt catheterization to relieve distress and prevent complications such as hydronephrosis (filling of the ureters and renal pelves with urine under pressure) and urinary tract infection.

The diagnosis of BPH is based on history, palpation of the gland by digital rectal examination, and the performance of various procedures to rule out cancer (discussed below). Benign enlargement of the prostate is typically symmetrical (not nodular), and the gland feels firm but not stony hard. The examining finger can reach only the posterior lobe of the prostate and most of the right and left lateral lobes. Enlargement of these parts of the gland doesn't necessarily correlate with the degree to which urine flow is compromised by the anterior and median lobes.

Catheterization of the bladder immediately after voiding may yield a substantial volume of retained urine (“post-voiding residual”). Other diagnostic procedures sometimes used include endoscopy (examination of the prostatic urethra with a urethroscope or cystoscope) and voiding cystourethrography (VCUG), a radiographic study of the bladder and urethra during voiding after injection of contrast medium through a catheter.

The symptoms of benign prostatic hyperplasia often respond to oral medicines. Two major classes of prescription drug, 5 $\alpha$ -reductase (5-alpha-reductase) inhibitors and  $\alpha$ -1 (alpha-1) adrenergic blockers, are currently approved for this indication.

In order to exert its physiologic effects, testosterone must be converted to its active form, dihydrotestosterone, by the enzyme 5 $\alpha$ -reductase. Drugs that inhibit this enzyme reduce

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*A generation ago, symptomatic prostatic hyperplasia was routinely managed by various surgical procedures, including total excision of the gland. More recently, the availability of effective oral medicines has greatly reduced the frequency of surgery for this indication.*

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the formation of dihydrotestosterone and thus reverse prostatic hyperplasia, which is hormone-dependent. The two 5 $\alpha$ -reductase inhibitors currently approved are dutasteride (Avodart) and finasteride (Proscar). (Finasteride is also marketed under the trade name Propecia for the treatment of male-pattern baldness, which is also dependent on dihydrotestosterone.)

The 5 $\alpha$ -reductase inhibitors reduce gland bulk very slowly, and weeks or months of treatment may be needed before results are seen. Possible side effects of these agents are diminished libido, erectile dysfunction, and breast swelling and tenderness. Finasteride and dutasteride can also delay the diagnosis of prostatic carcinoma by lowering the serum level of prostate specific antigen (PSA), to be discussed below.

Alpha-1 adrenergic blockers are the other class of prescription drug currently used to treat BPH: alfuzosin (Uroxatral), doxazosin (Cardura), prazosin (Minipress), tamsulosin (Flomax), and terazosin (Hytrin). These agents improve urinary flow by relaxing smooth muscle in the prostate gland. Beneficial effects are often noted within a day or two of starting treatment, but because alpha-1 blockers don't reduce the bulk of the prostate, they may provide little relief for men with very large glands.

Alpha-1 blockers were originally developed to treat hypertension. Doxazosin, prazosin, and terazosin are among drugs in this class that are currently approved for lowering blood pressure. Dizziness, light-headedness, and orthostatic hypotension (a symptomatic drop in blood pressure on standing up from a sitting or reclining position) are experienced fairly often by men taking alpha-1 blockers for prostatic hyperplasia.

Combination therapy with one drug from each class is routinely prescribed by some physicians.

Saw palmetto (*Serenoa repens*) is a small New World palm whose leaf stems (petioles) are edged with sharp spines, hence its name. Extracts of its edible fruit have been used for centuries in folk medicine for a variety of indications, including urologic disorders. In controlled clinical trials, saw palmetto has performed better than placebo in improving urine flow in BPH and has matched the effects of prescription medicines in mild disease. It has also yielded promising results in male-pattern baldness. Limited pharmacologic studies suggest that it has both alpha-1 blocking and alpha-reductase inhibiting properties.

Saw palmetto extract, being a natural product, ranks as a nutraceutical and is thus essentially exempt from oversight by

the United States Food and Drug Administration (FDA). It has not been approved by the FDA for any indication, and standards of purity have not been established for it. Available formulations may therefore vary widely in both efficacy and safety.

A generation ago, symptomatic prostatic hyperplasia was routinely managed by various surgical procedures, including total excision of the gland. More recently, the availability of effective oral medicines has greatly reduced the frequency of surgery for this indication. Surgery is still considered appropriate for men with severe disease refractory to drug treatment, those for whom drugs are contraindicated, and those with certain complications (recurrent acute obstruction, frequent urinary tract infections, hydronephrosis, bladder stones, hematuria).

For selected patients, **prostatectomy** (removal of the entire gland) is considered the procedure of choice. The surgeon may use either a perineal or a retropubic approach to the gland. In the latter technique, an incision is made in the lower abdomen and the bladder is dissected free from the anterior abdominal wall. Healing time after either procedure is prolonged, and postoperative complications such as incontinence and sexual dysfunction are relatively common.

For many years the standard surgical technique for BPH has been **transurethral resection of the prostate** (TUR, TURP). Under spinal or general anesthesia, a modified endoscope called a resectoscope is inserted through the penis and advanced to the level of the hyperplastic prostate. The surgeon then shaves away surplus tissue encroaching on the lumen of the urethra by means of an electrical loop, which also seals severed blood vessels. The instrument is equipped with an irrigating system that flushes away blood and tissue.

Obviously this technique also removes the mucosal lining of the prostatic urethra, which takes weeks to heal completely. An irrigating catheter remains in the bladder for about 72 hours after surgery. Mild to severe stress incontinence (leakage of urine with coughing, laughing, or straining), enuresis (bedwetting), and hematuria, often with passage of clots, may persist for several days.

About one third of patients experience some degree of sexual dysfunction after TURP, at least temporarily. Retrograde ejaculation (passage of semen into the bladder during orgasm) results from replacement of prostatic periurethral smooth muscle by scar tissue and is usually permanent. Because TURP removes only part of the gland, it is not as definitive a treatment as prostatectomy. Obstructive symptoms can recur after TURP and may require periodic repetitions of the procedure.

Several modifications of TURP have been devised to reduce the incidence and severity of complications and to shorten healing time. In **transurethral incision of the prostate** (TUIP), longitudinal incisions are made in the prostatic urethra without removal of any tissue. The risk of retrograde ejaculation is less after this type of surgery, but long-term control of symptoms has not been demonstrated.

**Holmium laser enucleation of the prostate** (HoLEP) uses a holmium laser to resect hyperplastic tissue instead of

the electrical loop of traditional TURP. In **holmium laser ablation of the prostate (HoLAP)**, surplus tissue is vaporized rather than trimmed away. **Transurethral ultrasound-guided laser incision of the prostate (TULIP)** resembles TUIP, but the incisions are made with a laser. One of the latter two techniques may suffice when the total volume of the prostate is relatively small. Bleeding during and after surgery is less with laser procedures, which can usually be performed as out-patient surgery.

Still less damaging methods use lasers or microwave radiation to coagulate excessive prostatic tissue. These are brief office procedures with few adverse effects or complications, but long-term outcomes may not match those of more aggressive measures.

The most conservative and least invasive procedure for BPH is placement of a metal **stent** within the prostatic urethra through an endoscope under regional anesthesia. This procedure can be performed in patients with medical conditions that forbid more elaborate surgery. However, adverse effects (dysuria, pollakiuria, incontinence) often occur. The removal of a prostatic stent, which may be deemed necessary in as many as one third of patients, often proves more difficult and invasive than its insertion.

**Adenocarcinoma of the prostate** is the most common cancer in men and the second most common cause of cancer deaths in men (after lung cancer). A carcinoma is a malignant tumor arising from epithelial tissue; an adenocarcinoma arises from glandular epithelium. Like BPH, prostate cancer represents an overgrowth of hormone-sensitive secretory cells in the prostate. There the similarities end. BPH is by definition benign, while prostatic carcinoma is malignant. BPH does not evolve or degenerate into cancer.

Prostate cancer is more common, occurs at an earlier age, and spreads more aggressively in African-American men. Because malignant changes usually begin near the periphery of the gland, urinary symptoms occur late, if at all. In more than one third of patients, cancer has spread beyond the gland by the time the diagnosis is made. Prostate cancer can invade the bladder, rectum, and other pelvic structures by direct extension and can spread to more remote sites by metastasis. The bones of the spine and pelvis are the most frequent sites of metastasis.

Nowadays, the diagnosis is usually made when the screening of an apparently healthy man by means of digital rectal examination (DRE) or determination of the serum level of prostate specific antigen (PSA) yields abnormal results.

An asymmetrically enlarged or nodular prostate, or one that feels abnormally hard to the examining finger, suggests the presence of malignancy. Although rectal palpation of the prostate is easily performed, requires no special preparation, and causes little discomfort, the procedure has low sensitivity (below 25% in some studies) and even lower specificity (below 10% in some studies).

**Prostate specific antigen**, an enzyme that helps to maintain the fluidity of semen, is produced by the secretory epithelium of the prostate. (Trace amounts occur in other tissues,

## Urology Abbreviations

$\alpha$ -1 (alpha-1) adrenergic blockers  
BPH (benign prostatic hyperplasia)  
cGMP (cyclic guanosine monophosphate)  
DRE (digital rectal examination)  
ED (erectile dysfunction)  
eNOS (endothelial nitric oxide synthase)  
5 $\alpha$ -reductase (5-alpha-reductase) inhibitors  
HoLAP (holmium laser ablation of the prostate)  
HoLEP (holmium laser enucleation of the prostate)  
nNOS (neuronal nitric oxide synthase)  
NO (nitric oxide)  
PDE-5 (phosphodiesterase-5) inhibitors  
PSA (prostate specific antigen)  
    age-adjusted PSA  
    PSA density  
    PSA velocity  
PVN ( paraventricular nucleus)  
TRUS (transrectal ultrasound)  
TUIP (transurethral incision of the prostate)  
TULIP (transurethral ultrasound-guided laser incision of the prostate)  
TUR, TURP (transurethral resection of the prostate)  
VCUG (voiding cystourethrography)

including the endometrium and the female breast.) A level below 2 ng/mL (2 mcg/L) appears in the blood of normal men. Elevation of the serum concentration of PSA is highly organ-specific, reliably drawing attention to the prostate, but is not at all disease-specific.

Statistically, most elevations above 4 ng/mL are due to prostatitis, not cancer. Other causes of elevation include benign prostatic hyperplasia, prostatic infarction, recent ejaculation, and even digital examination of the prostate. As many as one third of elevated PSA levels return to normal on followup testing without treatment. Although a level above 9 ng/mL (9 mcg/L) strongly suggests cancer, the PSA level is normal in more than 10% of men with biopsy-proven cancers.

Despite these limitations, the test was hailed as a more sensitive and more specific means of detecting early cancer than digital rectal examination when it was first approved by the FDA in 1992. Both the American Cancer Society and the American Urological Association recommended routine annual PSA screening as well as digital rectal examination for men over 50 (over 40 for African-American men or those with a family history of prostate cancer). After a brief show of resistance, Medicare began covering the cost of one PSA screening per year, and continues to do so. By the end of the twentieth century, PSA screening had become part of the standard of care for men over 50.

But almost from the first, the routine use of PSA testing in asymptomatic men has been the subject of intense controversy. A remarkable increase in the reported incidence of

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*Perhaps of greatest importance, to date no study has shown conclusively that early screening, detection, and treatment of prostatic carcinoma reduce mortality. The American College of Preventive Medicine has concluded that there is insufficient evidence to recommend routine screening with either DRE or PSA in men of any age.*

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prostatic carcinoma during the 1990s seemed to confirm the value of PSA screening. But it quickly became evident that the test was yielding an unacceptably high level of false positive and false negative results. A false positive test for prostate cancer causes needless anguish and expense and often leads to unnecessary treatment. Conversely, a false negative result from this highly touted procedure can generate an erroneous conviction that one is free of cancer and delay diagnosis until the disease has reached an advanced stage.

The lack of both sensitivity and specificity for prostate cancer is an inherent and irremediable deficiency of PSA screening. Lowering the cutoff level between normal and abnormal PSA increases the chance of detecting cancer at the expense of increasing the rate of false-positive results.

Efforts to enhance the value of the test by modifying the procedure or its interpretation have included determination of PSA velocity (rate of change in PSA level with the passage of time), age-adjusted PSA (using higher cut-off levels for older men), PSA density (the ratio of PSA level to the size of the prostate), and the ratio of free to protein-bound PSA (lower in malignant disease). None of these has shown clear-cut benefits in large statistical studies.

Many prostate cancers grow very slowly and never cause symptoms. Indeed, foci of cancer are found in the prostates of 40% of men dying after age 50 of other causes. PSA screening, by detecting many small cancers that would never become life-threatening, subjects some patients to basically futile treatment that may have adverse effects such as urinary incontinence and erectile dysfunction.

The 10-year survival rate of diagnosed prostatic carcinoma is about 90%. For that reason, virtually all authorities now oppose routine periodic digital rectal examination and PSA screening of asymptomatic men with life expectancies of less than 10 years, on the grounds that the risks of false-positive results and of adverse consequences of aggressive treatment outweigh any possible benefit in survival or quality of life.

Perhaps of greatest importance, to date no study has shown conclusively that early screening, detection, and treatment of prostatic carcinoma reduce mortality. The American College of Preventive Medicine has concluded that there is insufficient evidence to recommend routine screening with either DRE or PSA in men of any age. Both the U.S. Preventive Services Task Force and the National Cancer Institute advise against routine PSA testing.

Routine screening for prostate cancer can nonetheless be expected to continue indefinitely. Patients' expectations (driven by media hype and misguided "wellness" programs), practitioners' fear of legal liability for missing a cancer by omitting the test, and the profit motive (never far below the surface in the healthcare "industry") will no doubt keep DRE and PSA screening an active part of medical practice until a more reliable method takes their place.

Suspicion of prostatic carcinoma, whether based on symptoms or on abnormal results of screening, is followed up by biopsy of the gland. **Prostatic biopsy** is usually performed in conjunction with a transrectal ultrasound (TRUS) examination to assess the size and configuration of the gland. Under ultrasonic guidance, the examiner secures specimens from 10 or more sites with a spring-loaded biopsy needle that enters the gland and extracts a core of tissue in a fraction of a second.

Routine preparation for this procedure includes a cleansing enema, increased fluid intake to distend the bladder, prophylactic antibiotics, and local anesthesia. Alternative methods, less often used, obtain tissue through a perineal incision or through an endoscope inserted into the urethra. Adverse effects include pain, infection, and bleeding in urine, semen, or stool.

If sampled tissue is cancerous, microscopic examination shows cellular changes characteristic of malignancy, including varying degrees of anaplasia—a lack of the cellular differentiation that is typical of normal prostate tissue. Anaplasia is graded on a scale of 1 (nearly normal glandular differentiation) to 5 (total lack of differentiation).

The Gleason score (developed about 40 years ago by the American pathologist Donald F. Gleason) has been found useful in converting biopsy findings into prognostic information and in planning treatment. This score is determined by simply adding the grades of the two least differentiated specimens. A Gleason score of 2 or 3 is associated with a relatively favorable prognosis, a score of 9 or 10 with a poor prognosis.

The secretory cells of the prostate are highly sensitive to hormonal stimulation by testosterone. Neither BPH nor adenocarcinoma of the prostate occurs in eunuchs (men without testicles). Measures that reduce or block androgenic stimulation of cancer cells can slow the progression of the primary tumor and suppress growth of metastases. Antiandrogen therapy is often indicated in both early and advanced disease.

The most drastic and definitive means of stopping hormonal stimulation of prostate cancer is bilateral orchiectomy (castration, removal of both testicles). Pharmacologic agents often used are the androgen receptor blocker flutamide (Eulexin, Flutamin) and the gonadotropin-releasing hormone (GnRH) agonist leuprolide (Eligard, Lupron, Viadur).

Surgical procedures for advanced or highly malignant prostatic carcinoma include radical prostatectomy, which is associated with a considerable risk of urinary incontinence and erectile dysfunction, external x-ray or proton beam radiation, or transperineal implantation of radioactive isotopes.

**I**f any topics remain taboo these days in the news and entertainment media and in polite conversation, erectile dysfunction (ED) isn't one of them. Public figures discuss it frankly on national television, and pharmaceutical companies hawk their remedies for it with increasingly salacious TV commercials.

The older and less explicit term, impotence, was borrowed by medicine from the language of the law, where it refers to the inability of a person of either sex to have sexual intercourse. In the legal setting, impotence refers principally to an anatomic deficiency—in its most extreme form, absence of the penis or of the vagina—but also includes physiologic and psychological incapacity. Impotence has been recognized in both civil and canon law as an impediment to marriage and as grounds for the annulment of a marriage that has already taken place.

Erectile dysfunction is defined as the inability of a sexually mature male to achieve penile erection, or to maintain erection of sufficient firmness and duration to penetrate the vagina of a sexual partner. This topic lies at the heart of an immense body of folklore and urban legendry going back thousands of years. In remote antiquity it was often blamed on sorcery, a curse invoked by an enemy or by a jealous or rejected lover. That notion persists even today in some primitive cultures. Ancient and medieval works on medicine and pharmacology recommend a variety of botanical and other substances as infallible treatments for sexual impotence or as amulets to prevent it. Often the same substances figure in the composition of aphrodisiacs (love potions).

Erectile tissue occurs in the lips and nipples of both sexes as well as in the clitoris, penis, and other parts of the reproductive system. Its characteristic structural feature is a rich bed of anastomosing blood vessels and sinuses with unique inflow and outflow dynamics. When, under erotic stimulation, the arteriolar channels leading into a zone of erectile tissue open wide, the vascular bed becomes engorged and swelling occurs. The venules draining the tissue are so placed that this swelling compresses them, reducing outflow and increasing engorgement. Active constriction of the venules draining erectile tissue is not believed to occur.

Erectile tissue and its overlying skin are supplied with specialized nerve endings that respond to tumescence with heightened erotic sensations, enhancing the degree of engorgement.

By far the largest aggregation of erectile tissue in either sex occurs in the corpora cavernosa of the penis. Immediately beneath the skin of the penis is a tough fibrous envelope (Buck's fascia) that surrounds all three corpora. Dilatation of the vascular beds in erectile tissue compresses the venules that drain it against this unyielding fascial covering, promoting further vascular engorgement.

Penile erection occurs through an interplay of nervous and vascular phenomena and by a variety of physiologic processes. Direct physical stimulation of the penis causes erection through a spinal reflex involving sacral parasympathetic nerves. Like all spinal reflexes, this response is independent of brain function and can therefore occur in a man

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with complete transection of the spinal cord at the cervical level. And it is nonspecific, often occurring outside an erotic context. Erections are often observed in newborn babies—for example, as a result of manipulation during circumcision.

Erotic ideation due to visual stimuli or fantasy provokes erection by a more complex mechanism involving corticospinal tracts leading to the pelvic splanchnic nerves. Penile erection occurs regularly during REM (rapid eye movement) sleep by yet a third mechanism.

During the past 25 years, animal research has led to the identification of nitric oxide (NO) as a crucial neurotransmitter and vasodilator in the phenomenon of erection. Parasympathetic nerve endings induce dilatation in the arterioles that supply erectile tissue by releasing nitric oxide. Because nitric oxide is instantly degraded by tissue enzymes, nerve stimulation by itself is insufficient to produce a sustained erection. However, once vascular dilatation and engorgement occur, the endothelium (the lining membrane of blood vessels) begins to produce its own supply of NO through the action of an enzyme called endothelial nitric oxide synthase (eNOS). This triggers a biochemical cascade in which further engorgement leads to additional release of NO until maximal firmness of tissue is reached. It has recently been discovered that NO also acts as a neurotransmitter in the central nervous system (CNS), specifically in the paraventricular nucleus (PVN) of the hypothalamus, which is known to be concerned with psychologically induced erection.

The vast majority of penile erections subside spontaneously. At the height of male sexual arousal, however, ejaculation of semen can occur as sympathetic nerves trigger powerful contractions of the bulbospongiosus muscle. Also called the *bulbocavernosus*, this is a sheath of smooth muscle fibers surrounding the structures at the root of the penis, including the seminal vesicles and the urethra.

From puberty onward, penile erection occurring during REM sleep is occasionally associated with erotic dreaming. In men without regular sexual outlets, this may culminate in ejaculation (nocturnal emission, “wet dream”), which may or may not awaken the sleeper.

Ejaculation is accompanied by a climax of sexual pleasure (orgasm) that is felt almost exclusively in the perineum. As in women, male orgasm is accompanied by tachycardia, elevation of blood pressure, and rhythmic contractions of the anal sphincter. Male orgasm is followed almost at once by a transitory loss of libido (sexual desire) and by detumescence of

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the penis due to constriction of the arterioles supplying its erectile tissue.

Most men experience occasional failure to achieve adequate erection because of adverse physical or psychological circumstances: pain, negative emotions (anger, anxiety, grief, guilt), alcoholic intoxication or drug use, visual or auditory distractions. As currently used in medicine, the term *erectile dysfunction* implies a persistent problem.

Risk factors for ED include hypertension, cigarette smoking, and lack of physical exercise. The incidence of the disorder rises steadily with advancing years, chiefly because of degenerative changes in blood vessels. Arteriosclerosis can inhibit erection in a purely mechanical fashion by reducing the blood supply to the penis.

One form of vascular ED results from arteriosclerosis of the distal aorta, one or both common iliac arteries, or all three vessels. Leriche syndrome consists of reduction or absence of femoral pulses, intermittent claudication (pain in calf muscles induced by walking and relieved by rest), and erectile dysfunction. The diagnosis is confirmed by vascular imaging, and treatment is by replacement of the diseased vessels with a graft.

Depression is often accompanied by loss of libido and erectile failure. Damage to certain areas of the cerebral cortex, the hypothalamus, or the spinal cord by trauma, surgery, or disease (vascular, degenerative, infectious, or malignant) can diminish or abolish the neural signals for erection that are normally triggered by visual or auditory stimuli or erotic fantasy. As mentioned earlier, some men with spinal cord transection can achieve erection after manual stimulation of the penis.

Severing of pelvic splanchnic nerves during prostatic or colorectal surgery or other procedures can eliminate the neural stimulation that opens vascular channels to initiate erection. Even minor surgery such as inguinal hernia repair and vasectomy is sometimes followed by varying degrees of sexual dysfunction. Other sources of neurologic ED are damage to pelvic nerves by radiation therapy and frequent or prolonged bicycle riding.

As noted earlier, the treatment of BPH with drugs that block the synthesis of dihydrotestosterone can cause erectile dysfunction. Deficiency of testosterone or of thyroid hormone due to failure of the gland producing it is sometimes associated with loss of libido and varying degrees of sexual dysfunction. Injections of testosterone have helped some men to overcome ED.

Numerous prescription medicines have been implicated as causes of erectile failure, in particular antihypertensives, anti-convulsants, antihistamines, histamine H<sub>2</sub>-receptor antagonists, antiparkinson drugs, nonsteroidal anti-inflammatory drugs, tranquilizers, sedatives, and muscle relaxants. Regular abuse of alcohol or recreational drugs, including marijuana, can also cause chronic sexual dysfunction.

ED is a frequent complication of diabetes mellitus. As noted earlier, the paraventricular nucleus (PVN) of the hypothalamus is known to be involved in centrally mediated penile erection. Studies in rats with chemically induced diabetes mellitus have demonstrated an association between erectile dysfunction and a reduction of neuronal nitric oxide synthase (nNOS) in the PVN. Replenishing nNOS in the PVN by gene transfer significantly restores erectile responses. These studies clarify one mechanism of ED in diabetes and suggest a promising form of therapy.

Sexual impotence, although a seemingly inexhaustible source of ribald humor, is no joke to the victim. For most men, a persistent problem in achieving an erection is emotionally devastating. The resulting anxiety and depression typically aggravate and perpetuate the problem. Many sufferers are too embarrassed to seek medical treatment. Some turn in desperation to expensive but useless folk or quack remedies.

But until the last third of the twentieth century, scientific medicine had little to offer the patient with ED. When no underlying disorder could be identified, the condition was assumed to be of psychological origin, and treated with counseling, psychoanalysis, or psychotropic drugs. Testosterone injections were often administered without clear-cut indications; any favorable results achieved probably represented a placebo effect for most patients.

The alkaloid yohimbine, derived from the bark of a West African evergreen tree (*Pausinystalia yohimbe*), has a long-standing reputation as an aphrodisiac for both men and women. For most of the twentieth century it was one of the very few drugs endorsed by the medical profession as a treatment for ED. Pharmacologic studies have shown that it is an alpha-2 adrenergic receptor antagonist and that it alters dopamine and serotonin metabolism, but controlled studies have failed to demonstrate consistent improvement in erectile function. The drug is nonetheless currently available in both over-the-counter and prescription formulations.

For want of adequate pharmacologic agents to treat ED, various purely mechanical measures have been used with some success. For example, penile erectile tissue can be engorged with blood by external application of a vacuum, and the erection maintained by placement of an elastic ring around the base of the penis. Semirigid rods of synthetic material can be surgically implanted in the corpora cavernosa, creating a permanent partial erection. Or collapsible tubes may be implanted, which are distended with fluid from a reservoir in the thigh by activation of a pump placed in the scrotum.

In the 1970s it was discovered that local injection of adrenergic blocking agents such as papaverine and phentolamine directly into the penis can promote erection in men with various types of ED. Injectable alprostadil (Caverject) was

found to be an acceptable form of therapy despite the discomfort of the injections. The drug is also effective in the form of a urethral suppository or a topical cream.

The arrival in the 1990s of a new class of drugs for ED, the phosphodiesterase-5 (PDE-5) inhibitors, had a profound and lasting impact on many aspects of human sexuality. The prototype of these drugs was designed to treat hypertension by dilating blood vessels. Although it failed in clinical trials as an antihypertensive, it had an unexpected and seemingly miraculous “side effect”—and the rest is history.

To understand how these agents work, you need another small dose of biochemistry. Nitric oxide does not dilate blood vessels directly. Rather, it triggers the release of cyclic guanosine monophosphate (cGMP) type 5, which relaxes smooth muscle fibers in arteriolar walls. This agent is rapidly degraded by the enzyme phosphodiesterase-5 (PDE-5). Phosphodiesterase inhibitors prevent the rapid disappearance of cGMP and permit freer and more prolonged dilatation of vascular channels in erectile tissue.

The phosphodiesterase inhibitors currently on the market, as everyone over the age of 10 probably knows, are sildenafil (Viagra), tadalafil (Cialis), and vardenafil (Levitra). Although these are prescription drugs, they can be obtained—for a price—with minimal or no physician contact on the Internet and elsewhere. Tens of thousands of men without ED are taking them in the vain hope of enhancing sexual pleasure.

They have nonetheless revolutionized the medical management of ED. Except in cases of severe penile deformity, vascular disease, or nerve damage, PDE-5 inhibitors provide

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prompt correction of the problem from the first dose in a high percentage of cases, whether the cause is physical or psychological. Indeed, this is so well known to the general public that most men who consult physicians nowadays for the treatment of sexual dysfunction are unwilling to submit to psychological evaluation, blood tests, physical examination, or involvement of a sexual partner in diagnostic assessment. They want to try a phosphodiesterase inhibitor first, and only if that fails are they agreeable to diagnostic evaluation.

John H. Dirckx, M.D., is the author of *Laboratory Tests and Diagnostic Procedures in Medicine* (2004), *Human Diseases*, 2nd ed. (2003), *H&P: A Nonphysician's Guide to the Medical History and Physical Examination*, 3rd ed. (2001), published by Health Professions Institute. He is medical editor of all HPI publications.



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# Looking at Language

## World's Toughest Grammar Test

by Richard Lederer, Ph.D.

**T**oday I'm proud to pose four of the most difficult grammar questions I can possibly conjure up. Try thy best to choose wisely before consulting the explanations that follow. If thou gettest all four right, I shall knight thee Conan the Grammarian.

1. Which is correct?
  - a. Wisdom comes to whoever seeks it.
  - b. Wisdom comes to whomever seeks it.

In just about every statement you speak and write, each verb must have a subject, expressed or understood. In the sentences above “wisdom” is the subject of “comes”—and “who(m)ever” is the subject of “seeks.” Because subjects are cast in the nominative case, the subject of “seeks” must be “whoever.”

But, you ask, doesn't the preposition “to” take an object? Yes, it does. The object turns out to be not “whomever,” but the entire noun clause, “whoever seeks it.”

If that seems bizarre, have a look at another sentence: “I know who did it.” Here the object of the verb “know” is “who did it,” and the subject of the verb “did” is “who.” Few of us would speak or write, “I know whom did it.”

2. Which is correct?
  - a. A wave of technological innovations is crashing on the shore of our culture.
  - b. A wave of technological innovations are crashing on the shore of our culture.

Certain nouns are singular in form but may be either singular or plural in concept. Among them are “couple,” “faculty,” “family,” “group,” “staff,” “majority,” “team,” “jury,” “total,” “number” and “committee.” Such words are called collectives. The question often arises whether to treat a collective as singular or plural -- in other words, which verb form to use with it.

Most of the time (in the U.S., but not in Britain), collectives are expressed as singular, but, as with many grammatical questions, function rather than form is the more important consideration. Simply stated, this means that what the writer has in mind should be the controlling factor. If the

idea of oneness prevails, treat the noun as singular. If the idea of more-than-oneness predominates, treat the noun (and hence the verb) as plural: “The couple is marrying”; “The couple are divorcing.” In the quiz sentence, “wave” connotes a titanic unity. Hence. “A wave of technological innovations is crashing on the shore of our culture.”

3. Which is correct?
  - a. She is one of the drab homebodies who reads *McCall's*.
  - b. She is one of the drab homebodies who read *McCall's*.

Several years ago *McCall's* magazine published an advertisement with a headline describing an attractive young woman as “One of the drab homebodies who reads ‘*McCall's*.’” The ad elicited a flood of letters from readers who supported or objected to the singular verb “reads.”

The headline as printed was wrong. The relative pronoun “who” must agree with its antecedent, in this case, “homebodies,” which is plural. Hence, the verb must be plural, as in choice (b). A useful device in these “one of those who” constructions is to reverse the order of the sentence: “Of those drab homebodies who read *McCall's* she is one.”

4. Which is correct?
  - a. All she ever wears is dresses.
  - b. All she ever wears are dresses.

This kind of construction puzzles many people, but there is an answer: The subject of the sentence is “all,” which is a singular pronoun even though what it represents (dresses) is plural. “Dresses” is a predicate nominative or, as it is sometimes called, the subject complement. Since the subject, not the complement, controls the verb form and “all” is singular, the construction requires the singular verb “is.” Hence, the first sentence is the correct one. A good reminder is the novelty song “All I Want for Christmas Is My Two Front Teeth.”

Similarly, when “what” is the subject of a sentence, it is treated as singular even though the “what” being discussed is plural: “What I like most about summertime is fresh vegetables.”

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# Negative Pressure Wound Therapy

by John H. Dirckx, M.D.

Most of the recent advances in medical science have involved creating things that never existed in nature, such as synthetic antibiotics and radiopharmaceuticals. But sometimes real progress is made simply by finding ways to aid and abet the natural healing power of living tissues or to exploit natural forces such as gravity and osmotic pressure. And occasionally what seems like a cutting-edge development turns out to be the reinvention or rediscovery of a principle or technique that is hundreds or thousands of years old.

The application of oral suction to snakebites and certain other superficial lesions must surely go back very far into human prehistory. The practice of cupping (creating a partial vacuum within a cup-shaped vessel of horn or metal placed over a lesion or incision to draw out blood or other material) was well established before the beginning of the Christian era. Rubber bulbs, syringes, aspirators, suction pumps, and vacuum drainage devices have been integral features of medicine and surgery for decades or centuries.

Negative pressure wound therapy (NPWT) is therefore not so much the exploitation of a newly discovered principle or property of nature as a refinement of existing knowledge and techniques. NPWT is the intermittent application of a partial vacuum to a wound, ulcer, or other surface lesion by means of a motorized pump, appropriate tubing, and a dressing of spongelike synthetic material held in place by an occlusive drape.

Within the past decade, NPWT has shown promise in promoting the healing of acute and chronic wounds, partial-thickness burns, diabetic and pressure ulcers, and skin grafts. An environment of controlled negative pressure increases local vascularity and oxygenation of tissues while evacuating edema fluid, exudate, extravasated blood, and bacteria.

The use of polyurethane foam with a mechanical vacuum pump was pioneered during the 1990s by Drs. Louis Argenta and Michael Morykwas of Wake Forest University School of Medicine. A line of products based on their research is marketed by Kinetic Concepts Inc. (KCI) of San Antonio, Texas, as the V.A.C. (Vacuum Assisted Closure) Therapy System. This system is patented and received approval by the U.S. Food and Drug Administration (FDA) in 1995.

In 2004 the FDA approved the V1 Versatile Wound Vacuum System manufactured by Blue Sky Medical Group of Carlsbad, California. This system, which uses a vacuum chamber rather than a foam dressing, is based on research performed in Russia during the 1980s. A suit brought by KCI

against Blue Sky for patent infringement was rejected by a federal court in August, 2006.

The unique feature of the V.A.C. Therapy System is a sterile, resilient, open-cell polyurethane foam dressing material that can be trimmed to fit a surface lesion or to fill a wound or ulcer. The dressing is held in place and its margins sealed with a drape that has an acrylic adhesive coating.

The application of negative pressure to the occluded foam causes its cells to collapse and exert a continuous suction on the covered tissues. A manometer at the pump measures the degree of vacuum within the system. Drainage is collected in a canister. The use of a Y-connector makes it possible to treat more than one lesion simultaneously with a single pump.

NCWT removes interstitial fluid and infectious materials and maintains a closed, warm, moist environment for wound healing. Animal and limited human studies suggest that negative pressure assists in the development of granulation tissue, with wound contracture and neopithelization, by mechanically stimulating cell proliferation and angiogenesis (capillary formation).

Negative pressure wound therapy can be applied in a hospital or nursing facility or in the patient's home. Selected patients can remain ambulatory and even resume employment with a battery-operated portable pump worn on a belt around the waist. Dressings are normally left in place for 48 hours between changes. More frequent changes may be appropriate in the presence of infection or when close monitoring of wound status is necessary. Foam is not bioabsorbable and must be completely removed at each dressing change.

Current treatment guidelines call for a negative pressure of 125 mmHg to be applied for 5-minute periods separated by 2-minute intervals of normal pressure. These recommendations are based on empirical observations that a stronger vacuum or a continuous vacuum is associated with reduced rather than increased blood flow.

Vacuum therapy has been applied successfully to a wide variety of lesions, including deep, complicated, nonhealing wounds of mixed etiology, dehiscent surgical wounds, neuropathic and ischemic ulcers, and pressure ulcers (bedsores). It has permitted the use of simple techniques for soft-tissue reconstruction and wound closure that formerly required complex pedicled or microsurgical free flaps.

Some surgeons routinely employ NPWT both before and after skin grafting. Application of negative pressure to a thoroughly debrided wound promotes formation of a richly vascularized bed of granulation tissue for grafting. After

graft placement, a vacuum foam dressing serves as a bolster, conforming to the contours of the graft and keeping it in contact with its bed, and further enhances the probability of a successful take by continuously removing edema fluid or exudate from beneath the graft and reducing the microbial population. Foam that has been impregnated with ionic silver may be preferred for treating colonized or infected lesions or to reduce the risk of infection in skin grafts.

Contraindications to the use of NPWT include the presence within the treatment zone of severely ischemic, necrotic, or malignant tissue; uncontrolled infection; exposed organs, bone, or blood vessels; and a non-enteric fistula or sinus tract. All devitalized or necrotic tissue must be debrided, necessary surgical revascularization must be performed, and infection must be controlled with antibiotic therapy or by excision of osteomyelitic bone before application of negative pressure therapy. Grafting over exposed organs, blood vessels, tendons, nerves, bone, or implanted hardware requires the surgical interposition of natural tissues or the creation of a complete barrier with fine-meshed collagen or synthetic material.

The potential for significant hemorrhage with vacuum therapy must be considered in the immediate postoperative

period, in patients with fresh vascular grafts, and in those on anticoagulants. Poor patient compliance, such as may occur in dementia, negates the benefits of the treatment and contraindicates it.

Although employed with increasing frequency and supported by favorable anecdotal reports, NPWT has not been extensively studied in randomized clinical trials, and compelling evidence of its effectiveness in some applications is lacking. Large and rigorously controlled trials are or soon will be under way, and may eventually provide strong endorsement of NPWT. Meanwhile, health insurance carriers including Medicare have recognized it as medically necessary and reimbursable for certain conditions.

John H. Dirckx, M.D., is the author of *Laboratory Tests and Diagnostic Procedures in Medicine* (2004), *Human Diseases*, 2nd ed. (2003), *H&P: A Nonphysician's Guide to the Medical History and Physical Examination*, 3rd ed. (2001), published by Health Professions Institute. He is medical editor of all HPI publications.



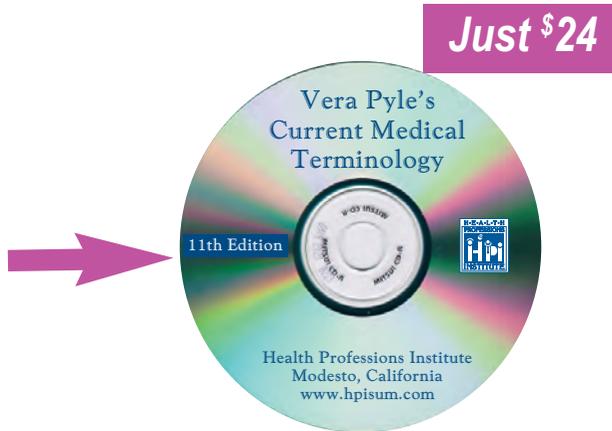
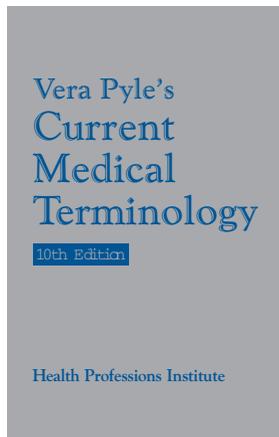
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**SMASH** (simultaneous acquisition of spatial harmonics) method—used in MRI procedures.

**anvil dunk**—a procedure used in laparoscopically performed gastric bypass to construct a gastrojejunostomy. The head of a stapling anvil is used to invaginate the stomach wall in order to bring the surgically created openings in the stomach and jejunum into apposition and stabilize them while they are being sutured together. See also *dunked end-to-end anastomosis*.

**bird-beak sign** (Radiol)—abrupt, smooth tapering of the distal esophagus on barium swallow, an indication of achalasia.

**black knee prosthesis**—a femoral component consisting of zirconium metal that has been heated and cooled in oxygen. This oxidizes the surface 5 microns of the metal and turns it into a black ceramic finish.

**capillary isotachopheresis** (cITP)—a modification of electrophoresis in which the use of two electrolytes with different chemical properties permits more rapid and more complete separation of analytes. It is a more sensitive means of measuring LDL subfractions in plasma.

**8-to-S-plasty**—a modified technique for closing a skin defect shaped like an 8 (two adjoining round lesions). The traditional method of repair by creating a single elliptical defect sacrifices healthy skin. In the Burow 8-to-S plasty, one triangle of skin with its apex at the constriction in the figure 8 is advanced to close one of the circular defects, and the other triangle of skin is advanced to close the other. No incisions are required and no skin is sacrificed. The suture line after closing resembles an “S”.

**odd facet of the patella**—the 7th facet of the articular surface of the patella, being the most medial portion. Only at 135 degrees of flexion does the odd facet contact the medial femoral condyles. Therefore, in most patients, it is a very underused part of the articular surface. Underuse has been incriminated as a cause of damage to the articular surface, an example being chondromalacia.

**rendezvous laparoendoscopic technique**—a technique used in endoscopic sphincterotomy to facilitate the identification and cannulation of the papilla. Using this technique, a guidewire is inserted through the cystic duct, caught with an endoscopic polypectomy loop, extracted from the operative channel and cannulized with a sphincterotome. This is then pulled through the papilla in the common bile duct, thus completing the

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## What's New in Medicine

### **Accin Uni-Knee total knee system.**

**Activa GPI**—a device that provides deep brain stimulation to the internal globus pallidus for the treatment of dystonia.

**Akreos posterior chamber intraocular lens**—an artificial lens used to restore vision and replace the natural lens of the eye after it is removed during cataract surgery.

**Aloxi** (palonosetron HCL)—a drug to prevent nausea and vomiting caused by cancer chemotherapy.

**Alvesco** (ciclesonide)—an inhaled synthetic glucocorticoid for asthma prophylaxis.

**APBI** (accelerated partial breast irradiation)—a shortened course of high-dose radiation therapy for early-stage breast cancer patients following lipectomy surgery. Using the SAVI applicator for delivering radiation from within the breast, brachytherapy treatment time is said to be reduced from 6-8 weeks to 5 days. See *SAVI applicator*.

**APPEAR technique**—an anterior perineal plane for ultra-low anterior resection of the rectum, a technique to effect an ultra-low sphincter-saving anastomosis, when this is not possible by conventional surgery.

**atrial chatter**—rhythmic fluttering movements of the arrested heart and cardiac bypass equipment during cardiac surgery. Atrial chatter is caused by alternate blockage and clearing of drainage holes in the cannula that is placed in the right atrium to conduct venous blood to the heart-lung machine for oxygenation and removal of carbon dioxide. Suction on the cannula intermittently draws right atrial and caval lining tissues into the holes, momentarily arresting flow. The steady influx of venous blood returning from the patient's systemic circulation then restores flow through the cannula,

but only until negative pressure again interrupts it.

**Avalon Elite**—a bicaval dual lumen catheter designed for simultaneous drainage and reinfusion of blood through the jugular vein during extracorporeal life support procedures.

**bellybutton incision technique**—a single-incision technique through the navel rather than multiple keyhole incisions or open laparoscopy, for removal of a kidney or gallbladder, for example.

**Bryan disk prosthesis**—a polyurethane nucleus designed to fit between two titanium alloy shells. The prosthesis requires precise milling and meticulous centering. It is held in place in a press-fit fashion with bony ingrowth occurring into the porous outer shells.

**calvaria** (not calvarium)—the top of the skull.

**Celution**—a system-based device that creates a cell-enhanced graft using a closed system to process adipose-derived stem and regenerative cells.

**CG Future ring and band system**—a trigone-to-trigone semirigid anuloplasty band for mitral valve repair. CG stands for Colvin-Galloway, the designers of the band.

**chandelier illumination**—a hands-free, powerful illumination technique by means of a specialized light fiber inserted through the corneal side port that provides sclera-scattering illumination from the sclerocorneal margin and endoillumination from the anterior chamber without obstruction by a hazy cornea. It may be used for complicated cataract extraction and in descemet-stripping automated endothelial keratoplasty (DSAEK).

**Claviplex** (dihydropyridine)—a calcium channel blocker administered

by IV infusion for rapid (2-4 minutes) control of hypertension when oral therapy is not feasible, as during surgery.

**COBAS TaqMan HBV test**—a laboratory test kit that measures the amount of hepatitis B viral DNA in the blood of an individual infected by the hepatitis B virus.

**coblation adenotonsillectomy**—a procedure whereby gentle radiofrequency energy is combined with natural saline to quickly and safely remove tonsils without damaging surrounding, healthy tissue. It is considered an alternative to the classic tonsillectomy.

**CONTAK RENEWAL**—implantable cardioverter defibrillator.

**continuous monitoring of intra-abdominal pressure (CIAP)**—a simple means of measuring intra-abdominal pressure using a standard three-way bladder catheter.

**crowded right atrium**—a form of vascular congestion.

**depth kymography**—the measurement of the human vocal fold vibrations in the vertical direction and its display as a 3-D figure.

**descemet-stripping automated endothelial keratoplasty (DSAEK)**—a procedure used to correct severe bullous keratopathy.

**diffusion tensor magnetic resonance imaging (DT-MRI) tractography**—an imaging technique designed to construct global connectivity of white matter tracts in the brain.

**digital tomosynthesis**—a technique for producing an arbitrary number of slice images generated retrospectively from a sequence of projections acquired during a single motion of the X-ray tube and thus exclude the need for other imaging modalities.

**DIO SM implant system**—a root-form threaded dental implant.

See other new, difficult, and hard-to-find medical terms in the electronic 11th edition of *Vera Pyle's Current Medical Terminology* published by Health Professions Institute, 2007.

# Update

**ductal lavage**—a diagnostic procedure to detect breast cancer. It involves collecting cell samples from the lining of milk ducts in a minimally invasive outpatient procedure. Laboratory tests then can determine if the cells are normal, irregular or malignant. The procedure also allows physicians to “bookmark” suspicious milk ducts and retest those sites at a later date.

**Echelon 60 Endopath stapler**—a stapling device used in laparoscopic weight loss surgery procedures and for laparoscopic colorectal and thoracic procedures.

**ELA Ovatio CRT-D system**—a ventricular assist device used to help treat congestive heart failure by providing specially timed electrical impulses to simultaneously stimulate the heart’s lower chambers (right and left ventricles).

**e.motion total knee arthroplasty system**—a mobile-bearing total knee prosthesis.

**Engage bipolar RF (radiofrequency) probe.**

**endomyometrium**—a combination of endometrium (uterine lining tissue) and myometrium (uterine muscle), such as may be seen in specimens produced by curettage of the uterus.

**endosalpingiosis**—the presence of mucous membrane of the type that lines the uterine tubes outside of its normal location. It often occurs in conjunction with pelvic disease or as a complication of pelvic surgery, especially salpingectomy. Although benign and usually asymptomatic, it can cause ovarian cysts or painful deposits on the pelvic peritoneum resembling endometriosis.

**endoscopic-assisted skin-sparing mastectomy combined with sentinel node biopsy**—an alternative treatment option for patients who are not candidates for breast-conserving surgeries due to presence of intraductal component or multiple tumors.

**endoscopic submucosal dissection (ESD)**—a technique which uses specially developed endoscopic knives for en bloc resection of esophageal squamous-cell carcinoma that measures 20 mm or more in diameter.

**EnRhythm ventricular pacing device.**  
**Entera percutaneous coronary and peripheral guidewire.**

**ESSx microdebrider.**

**EVOLENCE collagen filler**—wrinkle fillers.

**FloTrac sensor with Vigileo monitor**—a system for monitoring continuous cardiac output.

**FreeStyle Navigator**—a continuous glucose monitoring system.

**Gray minithyrotomy procedure.**

**hand-assisted and laparoscopic proctocolectomy (HALP)**—a procedure consisting of laparoscopic mobilization of rectum, sigmoid and descending colon followed by hand-assisted laparoscopic mobilization of the transverse and ascending colon and creation of an ileal J-pouch performed through a Pfannenstiel incision. An ileal pouch–anal anastomosis is completed by transrectal stapling device and protected by a loop ileostomy.

**hepatic venous occlusion**—the ligation or occlusion with serrefines, tourniquets and auricular clamps to prevent backflow bleeding of the the hepatic vein during liver resection procedures.

**Hirose scoring system**—a method for assessing conversational function after laryngeal surgery or trauma.

**Hoya iSpheric intraocular lens.**

**impedance-pH monitoring**—a technique used to detect the flow of fluids and gas through hollow viscera. With this technique gastroesophageal reflux can be detected independent of its acidity by differences in electrical impedance between the mucosal surface, fluids

and gas that surround the catheter. In combination with esophageal pH monitoring, it allows recognition of both acidic and weakly acidic reflux episodes. Compared to pH monitoring alone, it provides a higher yield in detecting reflux as the cause of symptoms in patients with proton pump inhibitor-resistant typical reflux symptoms.

**implantable miniature telescope (IMT)**—an investigation device for patients with end-stage age-related macular degeneration (AMD).

**interosseous suture endobutton**—a minimally invasive technique that eliminates the need for implant removal, as opposed to traditional interfragmental screw fixation, used to stabilize Lisfranc fracture dislocations.

**intracytoplasmic morphologically selected sperm injection (IMSI)**—a modification of the intracytoplasmic sperm injection (ICSI) in vitro fertilization technique for treatment of patients with severe oligoasthenoteratozoospermia. The procedure is based on a preliminary motile sperm organellar morphology examination under x6600 high magnification.

**intrapleural perfusion hyperthermochemotherapy**—a method of inducing apoptosis of tumor cells in patients with malignant pleural mesothelioma.

**Invitrogen SPOT-Light HER2 CISH kit**—a laboratory test that uses DNA probes to measure the number of copies of Her-2 gene on chromosome 17 in breast cancer cells by a chromogenic method. Increased number of copies of Her-2 gene indicates the breast cancer patient is eligible for treatment with the cancer drug Herceptin.

**Jetstream Pathway PV atherectomy system**—a peripheral atherectomy catheter designed for use in the treatment of peripheral artery dis-

# Update

ease (PAD), including hard and soft plaque, calcium, thrombus, and fibrotic lesions.

**Macrolane**—an injectable filler containing hyaluronic acid that is very thick and has dense viscosity. The 30-minute breast enhancement procedure is temporary (lasting for 12-18 months) and is performed under local anesthesia. It can increase the breasts by a cup size without implants.

**Magpro magnetic stimulation system.**

**MatrACELL decellularized pulmonary artery patch allograft**—a patch or pledget used for repair of ventricular outflow tract.

**Medtronic Attain StarFix lead**—a surgically implanted insulated wire that is designed to be used as a part of a biventricular pacemaker system. The Model 4195 lead is used with a compatible implantable pacemaker or implantable cardiac defibrillator to provide chronic pacing and sensing of the left ventricle.

**Medtronic Resting Heart system**—a multicomponent system used in arrested heart surgeries.

**Micros microcoil system**—an embolic coil attached to a device positioning unit for endovascular embolization of intracranial aneurysms, other neurovascular abnormalities such as arteriovenous malformations and arteriovenous fistulae, and arterial and venous embolizations in the peripheral vasculature.

**nanotomography**—ultra-high-resolution X-ray 3-D computed tomography.

**NOTES (natural orifice transluminal endoscopic surgery)**—a procedure by which an endoscope is inserted through a natural body opening, rather than through an internal incision in the stomach, vagina, bladder or colon. This avoids any external incisions or scars. (Example: An appendix removed through the mouth.)

**Nottingham Surgilig**—a prosthesis for acromioclavicular joint stabilization.

**Nplate (romiplostim)**—a thrombopoietin receptor agonist that stimulates marrow megakaryocytes to produce more platelets in chronic immune thrombocytopenic purpura.

**Occlutech Figulla ASD Occluder N**—a device used to close atrial septal defect.

**Occlutech Figulla PFO Flex Occluder N**—a device used to close patent foramen ovale.

**Omnitrope Pen 5 and Pen 10**—injectable somatotropin produced by recombinant DNA technology for the treatment of growth hormone deficiency in children and adults.

**ONLS (Overall Neuropathy Limitations Scale).**

**OVATIO CRT**—cardiac resynchronization therapy defibrillator. See *ELA*.

**Paradigm real time insulin pump.**

**pedicled tensor fascia lata flap**—an alternative option for the stable repair of pelvic floor defects to prevent radiation injury.

**personal therapy manager (PTM)**—a device designed to be used with implanted programmable patient-controlled analgesia pumps for the treatment of chronic pain.

**P-Mate disposable urine director**—a device that allows women to urinate standing up.

**Pringle maneuver**—the clamping of the hepatic pedicle during liver resection procedures to avoid excessive blood loss. The maneuver, however, cannot control backflow bleeding of hepatic vein.

**Prostiva RF therapy**—a radiofrequency treatment for benign prostatic hyperplasia in men over the age of 50 with prostate sizes between 20 and 50 cm.

**radio-guided occult lesion localization (ROLL)**—a localization method for nonpalpable breast carcinomas.

**Rad-57 pulse CO-oximeter**—a device that noninvasively measures carboxyhemoglobin levels in the emergency department when carbon monoxide poisoning is suspected.

**reading man procedure**—a technique for repair of resultant defects after surgical removal of circular skin lesions. The technique uses the extra skin relaxation gained with an unequal Z-plasty maneuver in favor of the defect closure. It is called "the reading man" procedure because its surgical design resembles the silhouette of a man who is reading a book held in his hand.

**Relistor (methylnaltrexone)**—an opioid receptor antagonist that relieves opioid-induced constipation.

**repetitive transcranial magnetic stimulation (rTMS)**—high-frequency (20 Hz) magnetic stimulation applied to the right dorsolateral prefrontal cortex for treatment of posttraumatic stress disorder.

**retinal vein occlusion**—occurs when one or more veins carrying blood from the eye to the heart become blocked and result in bleeding or fluid buildup, damaging vision. Hypertension, diabetes, and hyperlipidemia are risk factors for retinal vein occlusion.

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**Rotarix**—live attenuated human rotavirus vaccine for prevention of rotaviral gastroenteritis in infants and children.

**RVT CTO Guidewire Device (RVT-GDW)**—a guidewire system for treatment of chronic total occlusion (CTO).

**safe port plug technique**—a method for preventing incisional hernias by inserting a bioabsorbable hernia plug in trocar sites.

**Sancuso** (granisetron)—a drug administered by transdermal patch to prevent nausea and vomiting caused by cancer chemotherapy.

**SAVI applicator**—a single-entry, multi-catheter breast cancer radiation treatment device that allows customization of the radiation dose depending on the patient's anatomy and precise configuration of the surgical site. It is said to have minimal side effects for women who do not qualify for breast conservation therapy using a previously available balloon device.

**semiconstrained total elbow arthroplasty (TEA)**—a triceps-preserving approach for total elbow arthroplasty in which the tendon insertion on the olecranon, as well as the entire lateral soft-tissue envelope of the elbow, is left undisturbed.

**SENSE** (sensitivity encoding)—an MRI technique that is said to provide faster imaging with more applications.

**Sequoia spinal fixation system.**

**skyphoplasty**—modification of kyphoplasty, for the treatment of vertebral compression fractures.

**StabilEyes Ophtec capsular tension ring (OTR)**—an intraoperative support tool during cataract extraction surgery or a permanent implant device for postoperative intraocular lens fixation.

**Stratos LV and Stratos LVT**—cardiac resynchronization therapy pacemakers.

**surgical ventricular restoration**

(SVR)—a procedure combined with CABG in patients with advanced heart failure to remold the heart to a near-normal size, by cutting and suturing together stretched muscle and scar tissue resulting from the initial attack. Remodeling the heart can restore the heart to its normal,

elliptical shape, lowering the pressure buildup inside the heart cavity, reducing the amount of oxygen and energy needed by the muscle to keep pumping, and allowing the heart to work normally.

**Talent abdominal stent graft system.**

**Talent thoracic stent graft system.**

**Time-SLIP** (time spatial labeling inversion pulse)—a technique used in noncontrast magnetic resonance angiography to better illustrate the lower extremity vessels where blood flows more slowly. Contrast does not disperse evenly in lower extremities, resulting in a less accurate scan than an MRI without contrast.

**transaxillary incision** (transax or armpit incision)—used in the placement of implants for breast augmentations. To avoid scarring, an incision is made in the natural folds of the armpit tissue, then a channel is created up to the breast. The implant is then inserted and moved through the channel and positioned and centered behind the nipple. The advantage of this approach is that it results in no scar on the breast.

**transluminal balloon accessotome**

(TBA)—a device used for transmural drainage of pancreatic pseudocysts. The TBA device is inserted through a therapeutic duodenoscope and the pseudocyst punctured at the point of maximal bulge with the needle-knife at the end of the TBA. The needle-knife and handle of the TBA are withdrawn after the cyst cavity is entered and a guidewire inserted. The TBA balloon is inflated to dilate the tract, and a pigtail catheter inserted for drainage.

**TricOs A resorbable bone substitute**

—a bone void filler intended to be packed into bony voids or gaps of the skeletal system (i.e., the extremities, spine, and pelvis).

**Ultraslide acromioclavicular and syndesmotic repair device**—a nonabsorbable suture button retention device intended as an adjunct in fracture repair providing fixation during the healing process following a syndesmotic trauma, such as fixation of acromioclavicular separations due to coracoclavicular ligament disruptions or fixation of ankle syndesmosis due to anterior inferior tibiofibular ligament and/or posterior inferior tibiofibular ligament disruptions.

**Uresta pessary**—the first pessary made available over the counter to women. Traditional pessaries are ring-shaped and if the knob that supports the bladder is not properly positioned, they do not work. They also have to be fitted by a doctor and must be manipulated and folded for insertion. The Uresta pessary is shaped like a bell and works much like a tampon. It comes in three sizes. Once inserted, it sits under the urethra and provides mechanical support.

**Voluven**—an intravenous solution used to prevent or treat significant loss of blood from surgery. The solution contains a synthetic starch that does not dissolve in water and expands the volume of blood plasma. This helps draw the blood into capillaries, preventing the potentially fatal cases of shock that can result from a massive loss of blood.

**XIENCE V**—everolimus eluting coronary stent on the over-the-wire (OTW) Rapid Exchange (RX) stent delivery systems.

**Zenith TX2 thoracic TAA endovascular graft with the H&LB One-Shot introduction system**—used instead of more invasive open surgery in patients who have a descending thoracic aortic aneurysm.

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# Check Mates

by Judith Zielinski Marshall

Sharing a checking account is more intimate than sharing a bed. We did both for 29 years. The marriage was like all unions—exasperating, tumultuous, tender, erotic, depressing, joyous, and then, suddenly over. He died. Some things were easier than others. He was, after all, 24 years older than me and in failing health for years. As if that really matters.

Hospital caregivers and the funeral directors were magnificent. Friends overwhelmed me with kindness. The phone rang incessantly, the mail brought expressions of sympathy, and people came with food, cakes, and sweet remembrances. A simple wake took place in our home town and then a funeral in his New Hampshire home town. The autumn weather was spectacular, the foliage cheerfully mocking any sadness. He was laid to rest next to his beloved mother in the family plot we had visited together for decades and bedecked with wreaths and flowers. Our golden retrievers romped in the fields next to the cemetery, about a mile from where my Yankee boy was raised, the old homestead now occupied by a young professor's family who loved the history of the place. The sort of place that reminds one of *Our Town* or *Spoon River Anthology* or the music of Aaron Copeland.

As all bereaved know, when the rituals have ended and the phone stops ringing, then begins the endless business paperwork. Death certificates were purchased by the dozen and even more photocopied. Surprising finds were encountered, love letters hidden for 60 years, a wedding ring from a former marriage, a dog tag from our first golden retriever, his fraternity pins and Waltham watches and pictures from his Army days in Panama, 1940-1945, things I had never seen.

I did my crying and moaning in the shower, feeling very noble and Eleanor Rooseveltian, loving him and hating him and cursing him and missing him. Some angel or fairy or demon takes over and we remember only the good things. He was an expert cook and baker and went to bartending school in his 70s. He was a beloved professor. He was a gifted carpenter, an excellent fisherman. He loved the Red Sox. He retired when we were married and began his new careers. He slept on the kitchen floor with each new puppy. We sobbed and held each other with the loss of each of our four goldens. He packed my lunches for work, packed my suitcases for travel, rubbed my feet, and brushed my hair. He could fix anything, he could untangle anything, and he never threw anything away. He loved corny jokes and *Jeopardy* on television. He loved his son and daughter and his grandchildren. He could iron and sew buttons and hems. He was my mother's girlfriend—the two of them shopping, cooking, and chattering in the kitchen. She died a few months before he did.

Each year I would go abroad and he took me to the airport and picked me up a week or weeks later. We both had a wonderful time in our separations. The craft fairs we did, the bed and breakfast inn we owned in Vermont, the concerts by the lake, the square dancing and round dancing we did. Like my father, he never used foul language. There any resemblance to my father ended.

He loved Halloween and his favorite costume was a ballerina complete with tutu and toe shoes, which he wore when he was 85. He was the last to leave the hall, still dancing while I waited, exhausted, in the car. So the WASP from New Hampshire, himself hewn from granite rock, and the Polish girl from Cleveland, despite all differences, stayed together (as we often said) for the sake of the dogs.

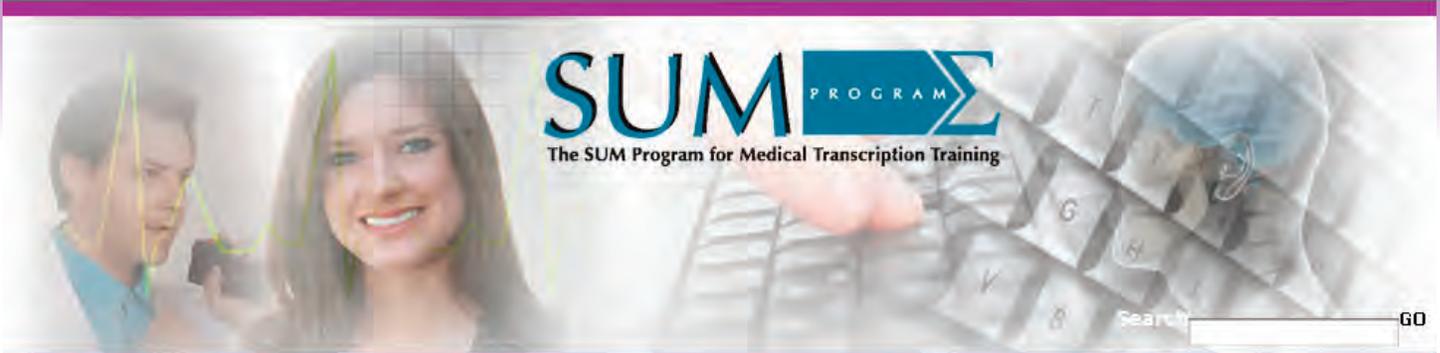
There was one thing I kept postponing. I did not want to go to the bank and take his name off of the account. I liked being the Mrs. in that Dr. and Mrs. It made me feel special and important. He was always very unassuming and modest, rarely used any titles. I was the pompous snob. During my blackest grief, solace appeared from a very unexpected source. I was struggling with changing the names on the check online with Big Bank and I called the help line. A young man on the telephone guided me to the correct page. "There you are," he said, "Just hit the delete button and your husband's name will disappear." As I saw Stuart's name disappear, letter by letter, a cry escaped my lips. "Oh," I said, "how hard it is to not see his name next to mine. He really is gone." And I began to cry.

Then the anonymous young man from the great big bank began to speak to me with great compassion and sensitivity, like an angel or minister or brother. What he said was beautiful and natural and as unexpected as a rainbow. He said he envied me. That I must have many happy memories and that of the billions of people on the earth, many never have the experience of a partner for so many years and the joy that was surely mine in thinking of him and our life together. At that moment, I accepted my husband's death and began to heal.

**Judith Zielinski Marshall**, Wakefield, MA., has been in the medical transcription field for over 30 years as an educator, business owner, and medical transcriptionist. She is the author of two books of humor and satire, *Medicate Me* (1987) and *Medicate Me Again* (1994), and scores of essays and articles published in *Perspectives* magazine over more than 20 years.



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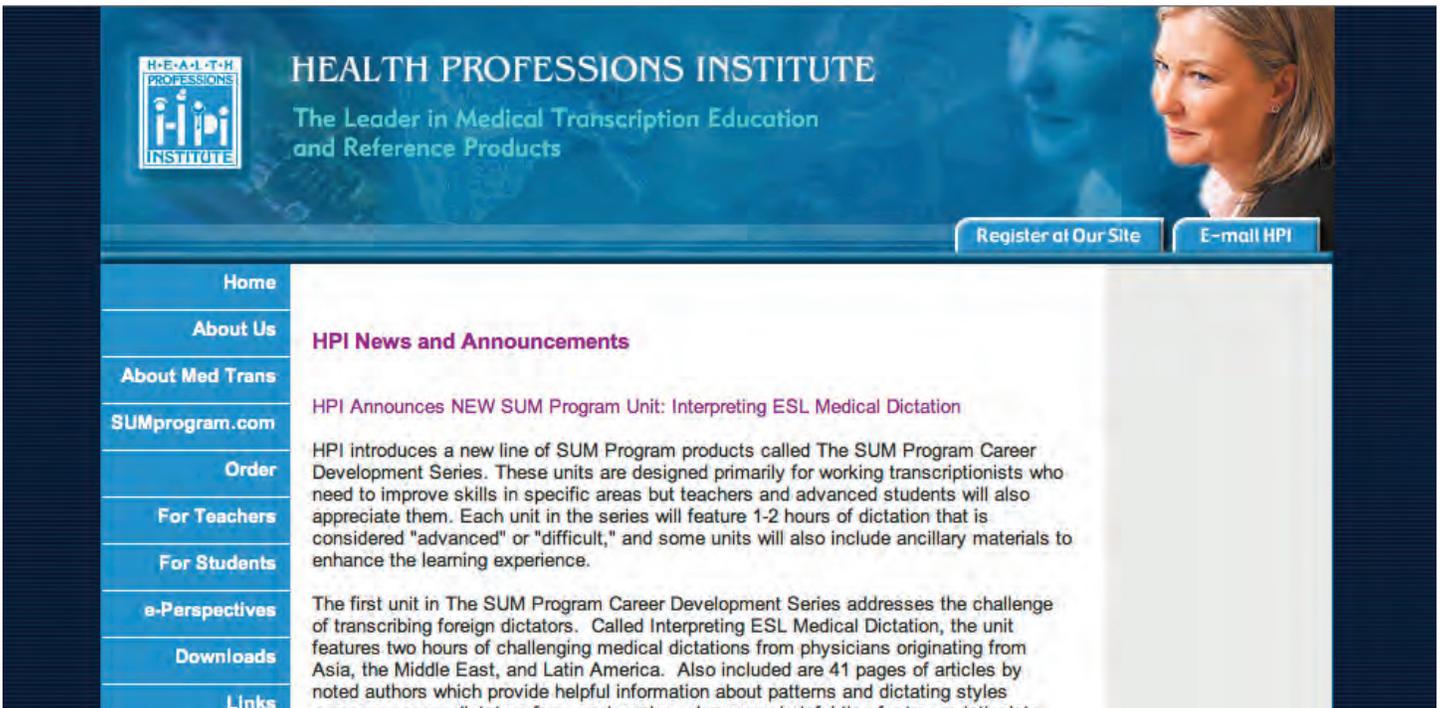


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