MAYO CLINIC HEALTH LETTER

Reliable Information for a Healthier Life

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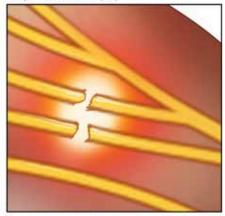
It's not uncommon to think that pain can be relieved by a drug. That's because for pain — such as resulting from a headache, an injury or surgery — pain medications or other methods of pain control often work fairly well.

But when pain becomes chronic — meaning it doesn't go away with time — these medications may not work as well. Medications may begin to lose

their effectiveness with longer term use, and some even begin to make pain worse or cause other unacceptable side effects, particularly in older adults. With chronic pain, medications alone usually aren't sufficient to control the problem efficiently for the long term. In fact, overuse of medications for this purpose frequently becomes part of the problem.

Still, appropriate medication use is an important part of developing a successful, comprehensive plan to manage many types of chronic pain. Knowing the benefits, risks and limitations of medications can help you navigate a path toward tolerable pain and improved quality of life. •

Peripheral nerve injury



Anti-seizure medications

When a nerve is injured, certain nerve receptors that communicate pain to thebrain may fire abnormally. Certain anti-seizuremedications help restore normal function of an injured nerve.

Targeted options

Deciding on potential drug therapy for your chronic pain usually involves an analysis of the cause or causes of pain and knowing which type of drug may be beneficial. Potential side effects of drug options also are part of the analysis, as is the question of how a drug fits into your overall plan to address chronic pain or with treatment plans for other problems.

Antidepressant drugs are commonly used for multiple types of chronic pain problems — such as fibromyalgia, low back pain, headaches, diabetic neuropathy and other forms of nerve pain. In some people, antidepressants appear to help with pain, independent of their possible effect on depression. They can also improve depression symptoms which can be caused by chronic, unrelieved pain. Some antidepressantss may also help promote sleep and reduce anxiety — all of which may contribute to pain. Antidepressants usually don't lose their effect due to the development of tolerance, and they may increase the effect of other pain drugs.

Tricyclic antidepressant drugs — including amitriptyline, desipramine (Norpramin) and nortriptyline (Pamelor) — are well-studied and appear to be effective for many types of chronic pain. However, side effects such as drowsiness, dry mouth, blurred vision and constipation can be a problem, particularly in older adults. Serotonin and norepinephrine reuptake inhibitor (SNRI) antidepressant drugs — such as duloxetine (Cymbalta), venlafaxine, or milnacipran (Savella) — have several Food and Drug Administration-approved uses for chronic pain and generally cause fewer side effects than do tricyclic antidepressants.

Several drugs developed primarily to control epileptic seizures have been found to help the chronic stabbing or shooting pain that can result from nerve damage or impaired communication in the central nervous system. When a nerve is injured or functioning abnormally, certain nerve receptors that com-

municate pain to the brain may fire inappropriately. Anti-seizure medications can help reduce this activity and decrease pain levels.

These drugs — which include gabapentin (Neurontin), pregabalin (Lyrica), carbamazepine (Carbatrol, Tegretol) and others — may be used to dampen pain of diabetic neuropathy or fibromyalgia, pain following shingles (postherpetic neuralgia) or facial pain due to trigeminal neuralgia. Drowsiness, dizziness and weight gain are among the more common side effects of these drugs.

With many pain drugs, it's often best to start at a low dose to minimize side effects, and to increase the dose gradually to an effective target dose. A period of up to six months may be recommended in order to evaluate the benefits and side effects along the way.

Dangers of opioids

Pain medications can end up contributing to a destructive cycle of worsening chronic pain. One common offender is a class of drugs called opioids, which are commonly referred to as narcotics. Opioid medications include morphine, codeine, hydromorphone (Dilaudid), oxycodone (Oxycontin, Roxicodone), tramadol (Ultram) and others.

Opioid drugs can be highly effective for relief of acute pain lasting less than about four months, and can play a crucial role in relief of cancer pain, particularly in relieving end-of-life suffering. However, a large body of research has shown that ongoing opioid therapy is of limited benefit for chronic pain. In addition to risks of drug dependence and addiction, continuous use of opioids may result in:

■ Side effects such as dizziness, drowsiness, sedation and unclear thinking which are especially prevalent in older people and may get worse with higher doses. Many of these side effects go away with steady dosing over a period of time. Other side effects include constipation and hormonal disturbances.

- The development of tolerance, in which higher doses of a drug are needed to get the same pain-relieving effect.
- Changes in your central nervous system that may heighten your perception of pain.
- Rebound pain, in which pain recurs after a dose wears off.

Chronic use of opioid drugs — particularly at low doses — can sometimes play a role in chronic pain management if strategically prescribed by your doctor and monitored very carefully. Strong consideration needs to be given to the risk versus benefit of chronic opioid medication, and ongoing use needs to be continually assessed for achievement of pain relief and functioning goals.

Nonmedication strategies

Using drugs to manage chronic pain works best as part of a larger plan that may include regular exercise and

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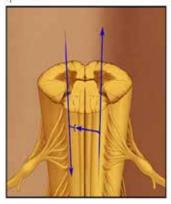
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Spinal cord



Antidepressents

Trycyclic antidepressants act on descending nerve fibers in the spinal cord, causing them to interfere with the transmission of pain messages in adjacent ascending nerve fibers. The result is a reduction in pain signals to the brain.

activity, physical therapy, counseling, stress management, acupuncture, massage therapy and other components.

Some people may be able to find adequate pain relief by working with their primary care doctor. However, visiting a more comprehensive pain rehabilitation center may be worth considering if you and your doctor have struggled to find effective management for your pain. Reducing or eliminating unhelpful medications — often with a planned tapering of the drug — is a

common occurrence in pain rehabilitation programs.

For your part, it's important to know the purpose of any drug you're taking. Have in writing the plan for dosing and stick to the plan. In addition, keep track of how the drug is working. If it doesn't seem beneficial or side effects occur, talk to your doctor about adjustments.

Drug effects or side effects may change over time, especially as other drugs are added or stopped and if new medical conditions arise.

□

Polypharmacy

Many with chronic pain end up taking multiple pain medications (polypharmacy) that have been prescribed over time by various health care providers. Your providers might not be aware of medications prescribed by others. The result is an increased risk of side effects from drug interactions from multiple pain medications, medications taken for other problems, nonprescription medications or even alcohol. Moreover, the increased risks don't necessarily come with improved pain control, and the expense of taking multiple medications can be substantial.

Although any drug could contribute to harmful polypharmacy, common pain-related drugs that may do so include muscle relaxants, drugs for sleep and drugs for anxiety. These are sometimes prescribed to help with dealing with pain and are typically intended for short-term use of a couple of days or weeks. However, instructions for proper duration of drug use can get lost in the shuffle, leading to ongoing therapy that doesn't help and may cause side effects and dependence.

If you're taking multiple pain medications, sit down with your doctor, a chronic pain specialist or a pharmacist for a focused review of all your medications. You and your doctor may need to refocus on the root cause of your pain and take a critical look at the benefits of each drug you're taking.

Health tips

Remembering to take your medications

Prescribed medications don't work if you forget to — or simply don't — take them. Improve your ability to take medications by:

- Making it easy Work with your doctor and pharmacist to keep your drug regimen to the fewest pills possible. Ask your pharmacist for easy-open lids if opening pill bottles is a problem. A variety of pillboxes are available to help keep your medications organized. Ask for clear instructions on when to take your drugs.
- Being motivated Understand what you are taking and why. It's harder to stay motivated to take a medication when you don't know why you're taking it.
- Using reminders Ask your pharmacist about the wide range of reminder technology options available. Among them are bottle caps that glow or make noise when you need to take a pill, wristwatches or alarm clocks with pill reminders, systems that send text messages or email reminders, and apps for a smartphone.
- Tackling side effects Rather than just stopping the drug if you experience side effects, contact your doctor to ask about adjusting dose, switching to another medication or taking other steps to diminish the side effects.
- Addressing cost Ask your pharmacist if there's a more affordable option for the drug prescribed. This may be as simple as switching from a newer brand name to a generic drug. Or, there may be a way to alter your overall therapy plan to a lower cost option that's similarly effective. □

News and our views

New heart failure drug being studied

People with heart failure may soon have another — perhaps more effective — alternative to the drugs currently available to treat the condition.

A recent study involving a large group of people with heart failure found that the investigational drug LCZ696 performed better than the angiotensin-converting enzyme (ACE) inhibitor enalapril (Vasotec), a drug that's considered to be a first-line therapy for heart failure. LCZ696 is a combination of two drugs — sacubitril, an experimental compound that works to inhibit the actions of an enzyme called neprilysin, and valsartan (Diovan), an angiotensin II receptor blocker (ARB) that works similarly to ACE inhibitors to dilate blood vessels and improve blood flow.

The group taking LCZ696 experienced fewer deaths and hospitalizations due to cardiovascular causes, as well as fewer overall deaths, when compared with the group taking enalapril. Because of the advantages of LCZ696, the trial was ended early so that both groups could benefit from the new drug. Importantly, LCZ696 also didn't cause the swelling that's occasionally seen with ACE inhibitors.

Results of the trial suggest that LCZ696, if approved for prescription in the U.S., may replace ACE and ARB inhibitors as first line therapy for heart failure. Mayo Clinic doctors, along with others, welcome new and improved ways to treat heart failure. However, as with any new drug, they advise caution, and hope the safety of LCZ696 is confirmed by continued research. \Box

Regular or decaf, coffee appears to protect the liver

Research supporting an association between coffee drinking and good health has been gaining momentum. Coffee is now associated with health benefits in many areas such as reducing the risk of cardiovascular disease and diabetes, maintaining a healthy weight, and longevity.

The benefits appear to be especially robust in terms of liver health. Coffee appears to reduce the risk of developing fibrosis or cirrhosis of the liver, and has been associated with a 40 to 50 percent reduction in the risk of developing the most common type of liver cancer. Most recently, a Mayo Clinic-led study found an association between coffee drinking and reduced risk of the liver autoimmune disease called primary sclerosing cholangitis.

A review of multiple studies looked at differences in the health benefits of regular coffee and decaffeinated coffee. The idea was to learn whether it's the caffeine in coffee that leads to health benefits or some other factor such as antioxidant compounds, of which coffee is a rich source. The study found that people who drank about two to three cups of coffee a day had the lowest odds of having abnormal liver test measurements, compared with people who drank less. People who drank decaf and those who drank caffeinated coffee appeared to have similar benefits, although there were too few decaf drinkers in the studies to make a definitive conclusion.

There's no need to feel guilty about enjoying your coffee. Keeping your daily consumption of caffeine at a moderate level of about 200 to 300 milligrams a day — which is two to three cups of regular brewed coffee — is a safe level for healthy adults. If caffeine isn't your thing, you can still potentially get most or all of the health benefits by drinking decaf. \Box

New blood pressure goals

Guidelines refined

High blood pressure is a common yet serious health problem in the U.S. High blood pressure can lead to significant health risks, including heart attack, stroke, heart failure, kidney failure and other organ damage.

Older adults are particularly at risk. Well over half of adults older than 65 and close to 80 percent of those older than 75 have high blood pressure. Between a third and half of these adults have uncontrolled high blood pressure, which means it's not being treated adequately or at all.

Recently, a panel of experts revisited national high blood pressure guidelines to try to better align treatment goals with the best evidence available. Their conclusions offer a few tweaks directed especially at older adults and those with diabetes or kidney disease.

In a nutshell

As with a garden hose, a certain amount of pressure is required to keep blood flowing through your body. Your blood pressure is the amount of force exerted on your artery walls to keep your blood flowing. Working together, several organs and body chemicals help control your blood pressure and keep it from rising too high or falling too low. They include your heart, arteries and kidneys, and other factors, such as your central nervous system and various hormones and enzymes.

When the complex system regulating your blood pressure doesn't work as it should, too much pressure may build up within your arteries. When increased pressure in your arteries continues on a persistent basis, your doctor may diagnose you as having high blood pressure.

For some, high blood pressure tends to develop over many years without an exact cause. But for others, an underlying condition causes high blood pressure. Kidney or thyroid disease and certain medications are examples.

A blood pressure reading, given in millimeters of mercury (mm Hg), has two numbers. The first, or upper, number measures the pressure in your arteries when your heart beats (systolic pressure). The second, or lower, number measures the pressure in your arteries between beats (diastolic pressure). Normal blood pressure is considered to be less than 120/80 mm Hg.

High blood pressure means you have high readings on a persistent basis. That means systolic blood pressure is consistently 140 mm Hg or higher, diastolic pressure is consistently 90 mm Hg or higher, or both. Isolated systolic hypertension — when diastolic pressure is normal but systolic pressure is high — is a common type of high blood pressure among people older than 60.

The goal of treating high blood pressure is to keep it within a range that will prevent damage to your arteries as well as organs such as your heart, kidneys and brain. Treatment usually involves lifestyle changes, medications or both.

Guidelines for treatment

Many doctors rely on a set of guidelines put together by national experts to help them determine how to treat high blood pressure effectively. These guidelines have evolved over the years to reflect expert opinion and the latest evidence available. The most recent guidelines, from the Eighth Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, were published in 2014. The results refined previous guidelines in three key ways:

■ Target goals for older adults — For healthy adults 60 or older, the latest treatment recommendation is to strive for a goal of 150/90 mm Hg. This is slightly higher than the previous guideline, which recommended a more aggressive goal of 140/90 mm Hg for everyone with high blood pressure, regardless of age. Clinical trials haven't

shown that the more aggressive goal is beneficial. The new goal doesn't mean you have to change your current treatment if it lowers your blood pressure to less than 140/90 mm Hg. As long as you're not experiencing any side effects, there's no need to adjust your medication.

- Target goals for people with diabetes or kidney disease Previously, the blood pressure goal for those with diabetes or kidney disease was 130/80 mm Hg. Current guidelines recommend that these people strive for the same goal as everyone younger than 60 with high blood pressure 140/90 mm Hg. As with the recommendation for older adults, the committee members based this decision on finding no substantial evidence that treating to a lower target is helpful.
- Preferred medication options In the past, thiazide-type diuretics were preferred as first line therapy. The new guidelines recommend four different classes of blood pressure medications.

Tailored treatment

One of the underlying principles of the new guidelines is that more-aggressive treatment isn't always better at improving health, nor is it backed by solid evidence, especially in the case of older adults or those with diabetes or chronic kidney problems. Less aggressive goals reduce the intensity of treatment, which also makes for fewer side effects.

Current guidelines

If you have high blood pressure, evidence-based guidelines advise keeping your blood pressure lower than:

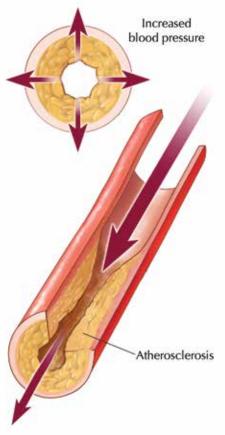
- 150/90 mm Hg if you're a healthy adult 60 or older
- 140/90 mm Hg if you're a healthy adult younger than 60
- 140/90 mm Hg if you have diabetes or kidney disease

At the same time, keep in mind that guidelines are based on data derived from large numbers of carefully selected people. Yet each individual's health is a unique combination of genes, environment, and physical and biological attributes. Work with your doctor and other members of your health care team to develop a treatment plan that's suited to your specific situation.

There are many different opinions about which blood pressure goals are best to reach for optimal health, especially for older adults and those who have diabetes or kidney disease.

Together, you and your doctor can decide on your treatment goal and medications so that they fit your lifestyle, give you good quality of life, and help you reduce your risk of heart disease, stroke and other consequences of high blood pressure.

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Blood pressure that's consistently higher than normal can stretch out arteries, making them weaker and more prone to rupture — and to scarring and stiffening that sets the stage for artery-clogging atherosclerosis.

Bone density testing

Detecting osteoporosis

The development of bone-thinning osteoporosis is a serious health issue in many older women and in some men. Osteoporosis is a silent disease, and many people find out they have it only after fracturing a bone and dealing with the hospital stay, disability and loss of independence that can result.

That's unfortunate since a screening test of bone density can detect osteoporosis — and a precursor to osteoporosis called osteopenia, where bone density is lower than expected for your age, but not yet at the level of osteoporosis. With either condition, lifestyle changes and treatment can be implemented to preserve or improve bone mass and, more importantly, reduce the risk of fractures.

Initial testing

It's recommended that women have bone density testing between menopause and age 65. If there are risk factors for osteoporosis, the recommendation is for bone density testing at a younger age. Your doctor can help you determine the best age to be tested.

Because men start out with significantly higher bone mass, bone density testing is recommended for all men at age 70. However, for men who have risk factors for osteoporosis, the recommendation is for testing between ages 50 and 69.

Risk of fracture or osteoporosis can be assessed in a variety of ways, including by using the Fracture Risk Assessment Tool (FRAX) (see FRAX on page 7 of our October 2014 issue).

What next?

Bone density testing is very important, but it doesn't provide a full picture of your bone health. Your doctor may want to assess your bone health status — possibly with the help of a FRAX questionnaire — to look for correctable factors that if not addressed may heighten your risk of a fracture due to osteoporosis. These may include getting adequate amounts of calcium and vitamin D, regular exercise and not being underweight.

Retesting intervals

You may be wondering when your bone density should be remeasured. If you have normal bone density, future bone scans may be used to rescreen for potential development of osteopenia or osteoporosis. If you have osteopenia or osteoporosis, bone density remeasurement may be used to track disease progression and the effect of therapy. Also, your risk of fracture will increase with older age, and repeat bone density measurement can help determine the right time for you to consider treatment of your osteoporosis or osteopenia. The chart below indicates the interval that may be recommended before getting

Diagnosis based on initial bone density test	T-score obtained from bone density test	Suggested retest interval	Factors that may change re-test interval
Normal bone density	Between +1.0 and -1.0	10 to 15 years	Interval may be shortened if you: Develop a health issue that increases risk — such as development of a disease or being placed on medication Interval may be lengthened if you: Remain healthy and at low risk
Osteopenia, which is below normal bone density but not to the level of osteoporosis	Between -1.0 and -2.4	2 to 5 years	Interval may be shortened if you have: A scan in early menopause, as rate of bone loss is swift at this time A T-score closer to -2.5 An elevated fracture risk based on a FRAX questionnaire Interval may be lengthened if you have: A scan in later menopause, as rate of bone loss slows at this time A T-score closer to -1.0
Osteoporosis	-2.5 and lower	2 years	You may benefit from yearly testing for a couple of years until it's clear that your bone mass is stable or improving. Thereafter, the tests can be less frequent. Changes in medications, such as taking a break from bisphosphonate therapy, may also alter the interval.

Fostering thankfulness

And improving well-being

In an age of plenty, it's easy to want more. Glossy catalogs fill our mailboxes. Shopping is a national pastime.

Somehow, though, more is never enough. Rather than fulfillment, discontent becomes the norm, leading to frustration and general dissatisfaction. These negative emotions can seep into other aspects of your life, affecting relationships, work and family.

What if you replaced desire with gratitude? Scientists are finding that gratitude, when exhibited as a regular part of life, not only helps explain a high sense of well-being but also can be fostered in simple ways to increase happiness and fulfillment.

What is gratitude?

Everyone feels thankful at times. You receive a gift or need help and you feel grateful to the person who thought of you or came to your aid. But gratitude can be inspired by more than just tangible or immediate benefits. You might be thankful for a loving family or a rewarding job. You might feel grateful when surrounded by natural beauty. Or you might experience greater appreciation of life if you narrowly escape a dangerous situation.

However, transient moments of thankfulness aren't enough to explain the wider concept of gratitude. Gratitude, especially as it correlates to a higher sense of well-being, isn't just an emotion but a way of being that focuses on noticing and appreciating the positive aspects of life and acknowledging that the sources of goodness are frequently outside the self.

Practicing gratitude means you're able to be content in the moment even as you pursue long-term plans. A grateful approach enables you to be happy despite the imperfections of life.

Benefits of gratitude

Although studies of gratitude are still in the early phases, available evidence suggests that an attitude of gratitude has a number of benefits in terms of health and well-being. People who are habitually grateful tend to experience:

- Lower risk of mental health disorders In surveys, a disposition toward thankfulness predicted a decreased risk of major depression, generalized anxiety, phobia, nicotine dependence, alcohol and drug abuse, and bulimia. It also helped people overcome trauma. People with post-traumatic stress disorder (PTSD) who scored high on gratitude had better daily functioning than did those with PTSD who scored lower, regardless of PTSD symptoms.
- Greater happiness A number of studies support a link between gratitude and being in a good mood, feeling happier and being more satisfied with life.
- Increased sense of fulfillment Gratitude has also been linked to self-acceptance, independence from peer pressure, personal growth, and a sense of purpose and control over your circumstances.
- Positive relationships Evidence suggests that gratitude is strongly related to building and maintaining strong relationships, through factors such as willingness to forgive, empathy, desire to share and help, and seeing the good in others.
- Better sleep Although not as much research has been done regarding the relationship between gratitude and physical health, investigators have found that gratitude can improve how well you sleep. In a study of about 400 people — 40 percent of whom had sleep problems — researchers found that grateful people slept better, stayed asleep longer and had less difficulty falling back asleep. Grateful people sleep better because they worry less and have fewer negative thoughts before falling asleep. They also tend to focus on positive things before falling asleep, which protects the quality of their rest.

Putting it into practice

There are a number of simple steps you can take to cultivate a grateful approach. Mayo Clinic doctor Amit Sood has authored several books on training your brain to decrease stress, improve resilience and live meaningfully. Here are some sample suggestions from his book, *The Mayo Clinic Guide to Stress-Free Living*:

- Start your day with gratitude As soon as you wake up, think of five people in your life to whom you are grateful. Picture them in your mind and send them a silent thank you. By making gratitude your first thought in the morning, you start your day on a much more positive note.
- Be thankful for simple things Throughout the day, mentally note the things you often take for granted but that make your life easy. Examples might include electricity, running water, clean clothing or a cup of coffee. Appreciate patches of green grass or wide-open sky.
- Look for the positive in the negative Try to see your struggles as necessary forces that focus your energy on what's really important. Be thankful that you have a flexible mind that allows adversity to help you learn and grow.
- Acknowledge your riches If you're feeling bad, count your blessings. Realize that there are likely millions of people who don't have their health and freedom to move about, a working car, warm home, steady job, and children and grandchildren who are safe.
- Keep a gratitude journal As you contemplate the people and things you're grateful for, write them down. Do it before you go to sleep so that your last thoughts of the day are positive and your rest is peaceful. Refer back to your journal on a rough day or when you need a reminder of how transformative thankfulness can be.
- Say thank you Express your gratitude to others in words and deeds. Say thank you in person for a kind action, or write a note to express your gratefulness for having a person in your life. □

Second opinion

I've heard that nonprescription decongestants can have significant side effects. Is this true?

While many people rely on nasal decongestants to help ease symptoms of a cold or flu, these medications can sometimes cause more harm than good, especially if taken repeatedly. Examples of commonly used decongestants include phenylephrine and pseudoephedrine. Often, these ingredients are included in multisymptom cold and flu preparations, such as Maximum Strength Mucinex D, Robitussin Multi-Symptom Cold, and Tylenol Sinus Congestion & Pain.

Taking a decongestant can temporarily ease congestion, but it can also create a slight increase in your blood pressure. If you already have high blood pressure, especially if it's not controlled, this may be a concern. Decongestants also can interfere with the effectiveness of certain blood pressure medications. If you're on blood pressure medication, check with your doctor or pharmacist before taking a nasal decongestant.

Extended-release decongestants may be less likely to raise blood pressure than the immediate-release kind but can still cause problems. People who have conditions such as diabetes, benign prostatic hyperplasia (BPH), ischemic heart problems, thyroid disorders, glaucoma and seizures generally should avoid using nasal decongestants.

In addition, using nonprescription decongestant nasal sprays (Afrin, Dristan, others) for more than three or four days can cause even worse nasal congestion once the decongestant

wears off (rebound rhinitis). All too often, people think their colds are getting worse, so they increase their use of nasal spray, leading to a downward spiral of medication use and worsening congestion. Other occasional side effects of nasal sprays may include nosebleeds, agitation and insomnia.

Thankfully, symptoms usually last no more than a week and a half. If you have continued congestion, it may be time to visit your doctor to explore more-effective treatment options. \Box

I prefer reading a printed book or magazine over reading the same material on a tablet or computer. Is one way better than the other?

Scientists are just beginning to study the effects of reading content on a screen versus on paper. Preliminary evidence suggests that reading printed material may have some benefits over screen-based reading.

To explore the effects of print versus screen on reading comprehension, Norwegian scholars compared two groups of 10th-graders. One group read text on paper, and the other group read the same text on a computer screen. Both groups took a multiple-choice test on the material they had just read. The paper-based group scored significantly better on reading comprehension than did the screen-based group.

The authors suggest several explanations for the result. On a computer screen, scrolling is inevitable unless the text is very short. Scrolling down or across a screen can hamper the process

of reading, interrupting your mental flow in a way that doesn't happen in print. In addition, printed material provides visual and tactile cues that help you remember the location of certain pieces of information, such as in the middle of the left-hand page, or toward the beginning or end of the text. These types of cues are typically lacking in a virtual reading experience.

Print readers also have access to the entire text and can see and feel the length of the text, whereas screen readers are limited to viewing the text one page, or a portion of a page, at a time. Such physical cues may help imprint the information in your memory and make it easier to recall later.

Screen reading is certainly convenient and can put a whole library at your fingertips. But so far, it appears that reading the "old-fashioned" way may be more conducive to understanding and retaining what you've read.

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