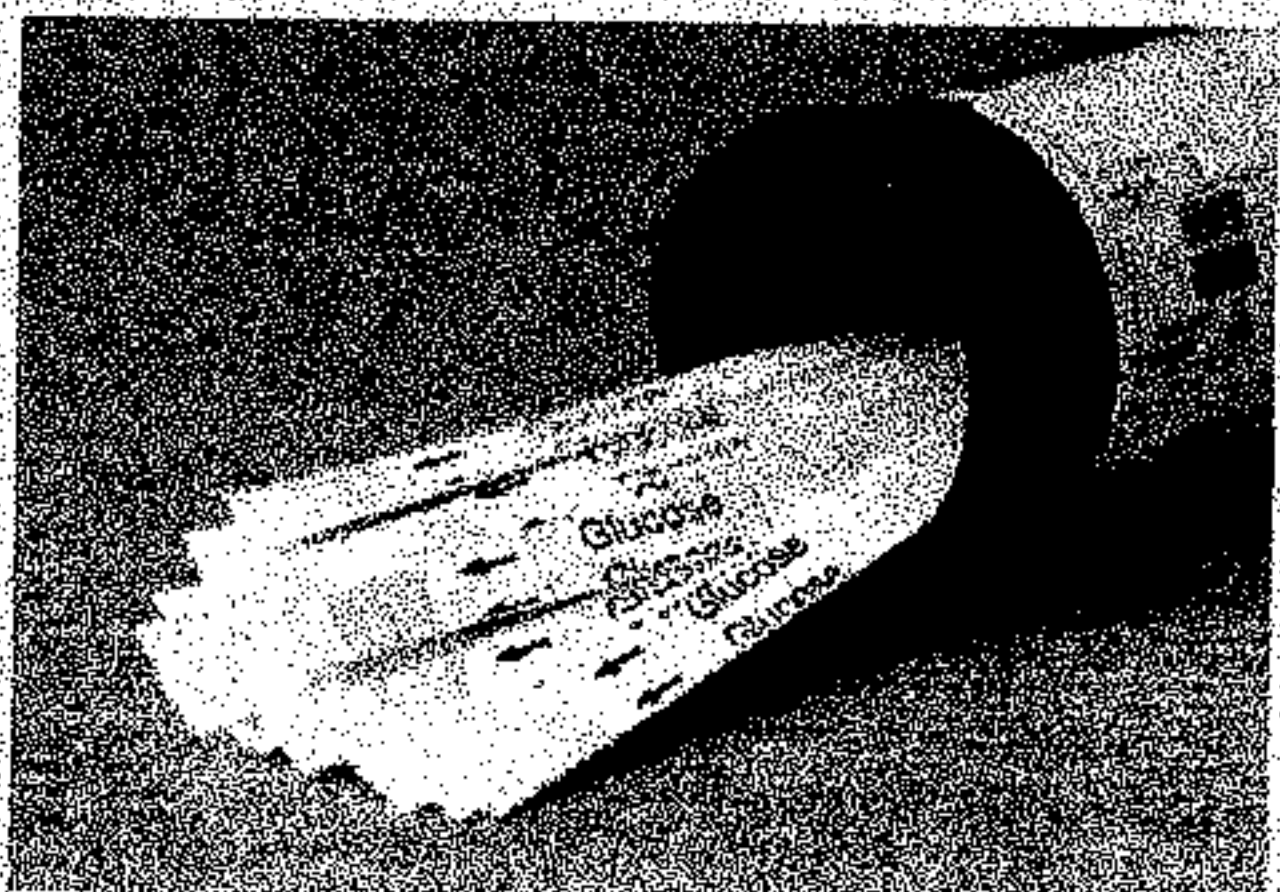


## BOTTOM LINE on the news

**COLLEGE TUITION INSURANCE IS NOT WORTH IT**, warns consultant Jane Klemmer. It reimburses 70% to 90% of tuition, housing, books, etc., if a student withdraws from school for covered medical or mental-health reasons. *But:* Risk of withdrawal is low for most students...common reasons for leaving, such as academic and disciplinary problems, are not covered... substance abuse may not be covered. *When it makes sense:* If tuition is very expensive or the student has struggled with a condition such as depression.

Jane Klemmer is founder of Klemmer Educational Consulting, Briarcliff Manor, New York. [KlemmerEC.com](http://KlemmerEC.com)

**TYPE-2 DIABETES PATIENTS HAVE MORE OPTIONS** beyond lifestyle changes and insulin shots, reports George King, MD. A class of drugs called GLP-1 receptor agonists—such as *dulaglutide* (Trulicity), *albiglutide* (Tanzeum) and *liraglutide* (Victoza)—



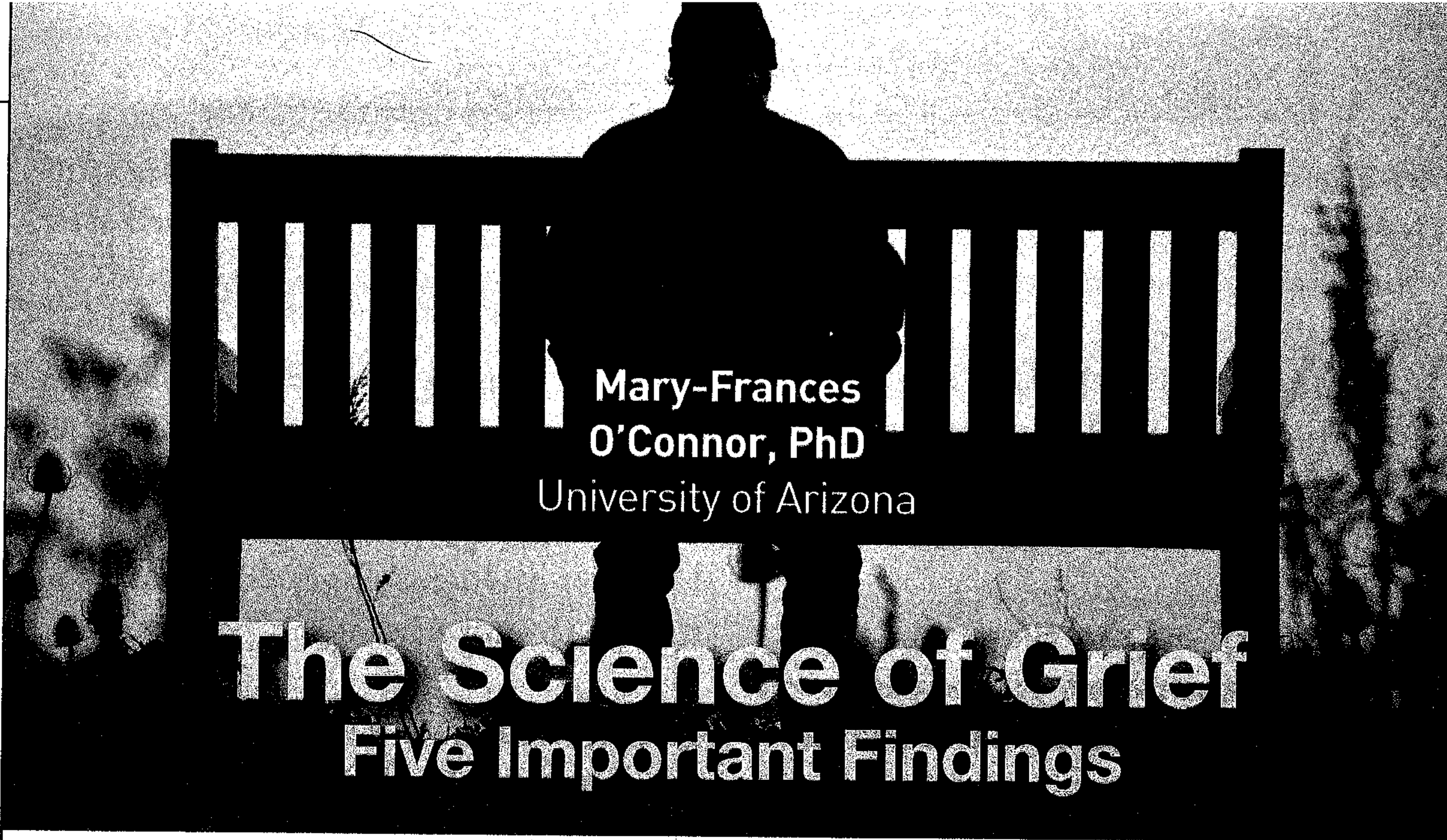
mimic a natural hormone that enhances insulin release, slows food absorption and

suppresses appetite. *Pramlintide* (Sym-*linPen*), an amylin analog, works similarly. These drugs are effective for blood sugar control and weight loss.

George King, MD, is chief scientific officer at Joslin Diabetes Center in Boston. [Joslin.org](http://Joslin.org)

**80% OF "THEMATIC" MUTUAL FUNDS AND ETFs HAVE CLOSED** over the past 15 years, says analyst Lan Anh Tran. Based on specific themes such as climate change or disruptive technology, such funds often are launched when a market niche is popular, only to have performance and/or assets dwindle. Only six thematic funds have managed to outperform the broad stock market for the last 15 years through June 9. *Investment themes long-term investors should be careful of:* Agriculture, bear market, energy and natural resources.

Lan Anh Tran is an associate manager research analyst at Morningstar, Inc., Chicago, which tracks 623,370 investment offerings. [Morningstar.com](http://Morningstar.com)



Mary-Frances  
O'Connor, PhD  
University of Arizona

## The Science of Grief Five Important Findings

If you've endured the loss of a loved one, you don't need anyone to explain what grief feels like. But why does grief hurt so much...why is it often hard to come to terms with loss...and what are the best ways to cope?

Psychologists and neuroscientists have made progress unraveling the secrets of grief and grieving. In fact, prolonged grief has been added to the *Diagnostic and Statistical Manual of Mental Disorders*. Five findings are worth knowing if you have recently endured the death of a loved one...

**It's normal to expect a recently deceased loved one to walk through the door even though you know he/she is gone.** Grieving people who experience this disconnect sometimes worry that they're losing their grip on reality, but recent studies suggest this is simply a symptom of how the brain works.

In a 2013 study, Norwegian neuroscientists monitored rats' neural activity as the rodents encountered a LEGO tower in the same spot every day for 20 days. The neuroscientists then removed the LEGOs and discovered that neurons in the rats' brains fired when they neared the spot where the tower used to stand. The rats' brains reacted to something they *expected* to encounter even though it was obviously gone. It took days for the rats' brains to update to the missing tower. If it takes days to adjust to missing LEGOs, it's only natural that it can take months to adjust to the loss of a loved one.

Further research suggests that it's especially difficult to adjust to the loss of a loved one because this forces the brain to reconcile two powerful but divergent

sources of information. The memory reports that the loved one has died...but the bond between you and the deceased loved one continues to exist in your brain. This bond is very real to the brain, and there's reason to believe it operates completely separately from memory.

In one compelling experiment, researchers at University of Iowa showed that a patient gravitated toward the caretakers who treated him best. That wouldn't be surprising, except that this patient had suffered a brain injury that made it impossible for him to form new memories—his memory couldn't tell him how his caretakers treated him. If the relationship bonds formed in the brain operate independently from episodic memory, as this research suggests, it makes perfect sense that these bonds would not automatically update to reflect that our loved one has died, even though our memories assure us this is true.

**Coping strategy:** When you can bear it, spend some time in the places that you used to visit with your deceased loved one. This might be painful, but it can help update your brain to the reality that he/she is gone. Until that update occurs, accept that you might have a strange sense that your loved one is both gone and yet somehow still in existence.

Also be aware that this could trigger unexpected feelings of anger toward >>

*Bottom Line Personal* interviewed Mary-Frances O'Connor, PhD, associate professor of psychology at University of Arizona and director of that school's Grief, Loss and Social Stress Lab. She is author of *The Grieving Brain: The Surprising Science of How We Learn from Love and Loss*. [MaryFrancesOConnor.com](http://MaryFrancesOConnor.com)



Photo of Mary Frances O'Connor, PhD: Bevin Christina Dunn



>> the deceased—if part of your brain believes your loved one is still around, you might get angry that he hasn't called or returned home. This anger does not mean you harbored latent anger toward the deceased or that you need to reevaluate the relationship—it's a symptom of your brain's divergent messages.

**Your grief might recur for many years...but your grieving means your grief will likely ebb over time without ever completely going away.** A man

whose wife got home from work at 6:00 pm every day for years hears a sound at that time, and for a moment, he imagines that his wife is coming through the door. Suddenly the truth hits him—his wife died, and she is never



coming home again. The whipsaw of emotion triggers a wave of grief.

A woman who lost her husband felt lost for a few months but slowly began to feel reconnected to her life. One day, she realizes that the anniversary of the day her husband died is fast approaching, and she's plunged into grief again.

Grief has a habit of returning unexpectedly—but grief is not the same as grieving. Grief is a moment in time, a wave crashing on shore when something brings a lost loved one to mind, then retreating back into the ocean. Grieving is the long-term process of coping with a loss. And while it's common to experience moments of grief in the years following a loss, only a modest percentage of people suffer from extended problems related to grieving.

A project by researchers at University of Michigan followed 1,500 older married adults, starting when their spouses were alive and continuing after one spouse in each couple died. They found that while moments of grief are common after the death of a spouse, the trajectory of grieving turns toward adaptation for the majority of widows and widowers. Most never fall into depression... and only perhaps 10% endure severe grieving that continues to dominate the mind without improvement, a condition sometimes called "prolonged grief."

**Coping strategy:** If a year or more has passed and the loss and grief still

dominate your life, visit Columbia University's web page about prolonged grief to locate a therapist (on ProlongedGrief.Columbia.edu, click the "For the Public" tab). *But:* Wait at least one year following a loss to seek this help—until then, it can be difficult to determine whether or not someone is experiencing prolonged grief. Don't let moments of grief convince you that you're not healing.

**Neurochemicals deepen our suffering when we lose a loved one.** Prairie

voles live very different lives than humans, but these little rodents mate for life and form close bonds with their one-and-only. A neuroscientist at Germany's University of Regensburg investigated what happens inside the brains of prairie voles that are kept away from their partners. *Answer:* The voles' brains were flooded with a neurochemical similar to the human stress hormone *cortisol*, and the stress continued until these rodents were reunited with their mates. Humans are subjected to comparable neurochemical encouragements to return to our loved ones, and these stress-inducing neurochemicals are released even when it's impossible to reunite.

*One more prairie vole trait worth noting:* When voles reunite with their mates, they comfort each other with grooming. Human partners provide comfort for their mates at stressful times, too. This points to an additional challenge when we lose a life partner—not only are we flooded with stress-causing neurochemicals, we no longer have the person we depended on to help us through stressful times.

**Coping strategy:** Engage in activities that reduce cortisol production and increase neurochemicals that produce positive feelings, such as *dopamine* and *oxytocin*—exercise, yoga, anything else that makes you feel relaxed.

**Working hard to overcome grieving isn't the best way to overcome grieving.** A study conducted by social psychologists at California State University Channel Islands and University of Arizona asked participants their opinion of four potential strategies for dealing with the loss of a loved one—journaling

about grief...sharing stories about the deceased with other people who cared about him/her...going to a party and having fun...and watching a favorite movie. Most participants believed the first two options were most likely to be effective. They were wrong. There's a widely held belief that the way to overcome grief is to work our way through it by confronting negative emotions. Doing things that bring us joy may seem like it's shirking this necessary work, but engaging in activities that increase positive emotions can be more effective at reducing sadness than confronting negative feelings. Among other benefits, positive emotions have the power to change a grieving person's cognitive state, improving creative thinking and broadening attention.

**Coping strategy:** The takeaway from this is not that sharing stories about a loss or journaling is bad, but that activities that bring happiness tend to be more beneficial. If going to a party doesn't bring you joy, do it anyway...again and again. A new activity might not bring happiness until we repeat it enough that the brain accepts it as a habit.

**Sleep medication slows the recovery process.** Insomnia is a common side effect of grief—ruminating over a loss when the lights go out keeps grieving people awake...as does elevated levels of the stress hormones *cortisol* and *adrenaline*. Well-meaning doctors often prescribe sleep medications to grieving patients—but they probably shouldn't. A study by researchers at Imperial College School of Medicine found that sleeping pills don't make people feel less grief, and, counterintuitively, they actually make bereaved people sleep worse in the long term. These medications might bring sleep on the nights they're taken, but they prevent people from learning how to sleep without medication.

**Coping strategy:** Force yourself to get up from bed on schedule each morning, even if grieving kept you from sleeping the prior night. Enforcing the morning part of a sleep routine encourages the evening and nighttime routine to eventually fall back into place, too. If that fails, seek help from a sleep medicine practitioner. **BLP**