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**BBC**

**Study reveals laughter really is the best medicine**

Pallab GhoshBy Pallab Ghosh Science correspondent, BBC News

People feel less pain after a good laugh, because it may cause the body to release chemicals that act as a natural painkiller, research has suggested.

The researchers at the University of Oxford also think the ability to belly laugh was unique to early humans.

This, they believe, enabled our ancestors to form much larger tribal groupings than the ape-like species that lived alongside them.

The research is published in the Proceedings of the Royal Society B.

The experimenters first tested the pain thresholds of volunteers.

They were then split into two groups, with one being shown 15 minutes of comedy videos, while the other was shown material the researchers deemed boring - such as golfing programmes.

The researchers found that those subjects that had recently experienced belly laughs were able to withstand up to 10% more pain than they had done before watching the videos.

To their surprise, the scientists also found that the other group was less able to bear pain after watching 15 minutes of the "boring" programmes.

Situation comedies

The type of laughter was also important.

Tittering and giggling did not elicit any physiological effect; only a good guffaw did the job.

Professor Robin Dunbar of Oxford University, who led the research, believes that uncontrollable laughter releases chemicals called endorphins into the body which, as well as generating mild euphoria, also dull pain.

"It's the emptying of the lungs that causes [this effect]," he told BBC News.

"It's exactly what happens when we say 'I laughed until it hurt'.

It seems to be extremely painful and it's that pain that produces the endorphin effect."

However, not all the comedy programmes were able to hit the spot, according to Prof Dunbar.

Slapstick humour seemed to score highly whereas clever stand-up comedy routines, though found to be enjoyable, had no effect on raising pain thresholds.

"I hesitate to say this but we did have one series with [British stand-up comic] Michael McIntyre and we thought he'd go down really well - but it seemed like his humour was too cerebral to produce serious guffaws," Prof Dunbar explained.

"Things that worked very well were slapstick comedies such as Mr Bean.

"Situation comedies such as Friends also seemed to be particularly successful."

Spinal Tap

The researchers were not able to measure endorphin levels directly because that would have involved extracting fluid from the volunteers' spines using a long needle - a process which, Prof Dunbar concedes, would quickly take the smile off their faces and possibly influence the results.

Instead, the researchers took what they referred to as a proxy measurement, which tested the pain threshold for each volunteer.

This involved, for example, placing a bag of ice on their arms to see how long they could withstand it.

The greater the increase in pain threshold, the greater the amount of endorphins produced.

The aim of Prof Dunbar's study is not to develop a new treatment.

Instead, it is to explore the role of laughter in the establishment of human societies two million years ago.

All apes are capable of laughter, but it is only humans that are able to belly laugh and so release endorphins.

Prof Dunbar's theory is that as well as dulling pain, endorphins also make people more susceptible to developing bonds.

"Laughter struck us as such an odd thing," he said.

"We spend so much of our time in conversations trying to elicit laughter and laughing ourselves [so] it looked like the first port of call.

"At this point what we're trying to show is, yes you do get endorphin activation.

"The next stage will be to see whether laughing really allows groups to bond together and work as a group better and act more generously towards each other."

If that is the case, then it may explain why some two million years ago, the first humans were able to form large tribal communities of up to 100 - whereas other apes and ape-like creatures that existed at the time were only able to form communities of up to 50.

This theory creates the scenario of our ancestors sharing laughter around the fire, possibly the emergence of the first clowns, clubbing each other for comic effect.

DAILY MAIL (London)

September 14, 2011 Wednesday

**LAUGH . . . AND IT WON'T HURT AS MUCH!**  
**BYLINE:** By Fiona MacRae  
  
**LENGTH:** 233 words

HAVING a good giggle doesn't just make you feel better Ð it combats pain, researchers have found.

However, only genuine laughter does the trick.

While a polite titter may keep others happy, it does nothing to raise levels of feel-good endorphins, say the Oxford University scientists.

Professor Robin Dunbar, one of Britain's leading evolutionary biologists, recorded the amount of laughter produced when his subjects watched comedy videos on television, and during comedy routines at the Edinburgh Fringe Festival.

Their laughter levels were compared with those who watched factual clips or drama.

Professor Dunbar then assessed their pain tolerance.

Tests included measuring how long they could stand a frozen wine cooler sleeve on their arm, and how long they could stand with their backs against a wall and their legs at right angles.

The results, published in the journal Proceedings of the Royal Society B, revealed that those who watched comedy in a group laughed the most and had a heightened pain tolerance.

The researchers said: 'Laughing is physically very exhausting, and anything that taxes the body physically triggers endorphins as a natural response as part of the pain control mechanism.'

However, only real laughter works. Professor Dunbar said: 'We think the effect only comes from full-blown hearty laughter, which involves a series of sharp exhalations with no in-drawing of breath.'

Daily Star

September 14, 2011 Wednesday   
Edition 1;   
National Edition

**Laughter's the best medicine...no joke!**  
**BYLINE:** JAMES MOORE  
  
**SECTION:** EDITORIAL; Pg. 6  
  
**LENGTH:** 531 words

HAVING a belly laugh really is the best medicine, according to the experts.

New research shows just 15 minutes of comedy is enough to increase the amount of pain people can stand by 10% thanks to feel-good endorphins released into the brain.

Researchers at Oxford University monitored two groups of participants as one group watched sitcoms and the other group watched nature programmes.

Professor Robin Dunbar said: "Those watching the comedies laughed for about a third of the time and their pain tolerance rose as a consequence."

Here JAMES MOORE gives us all a boost with some help from Britain's best comics.

EVERY time I hear about the trouble in Syria, I keep thinking they mean Italian football.

- Gary Delaney

OUT of respect for the Queen, when I lick a stamp I do it with my eyes shut. - Russell Brand

MY 85-year-old aunt saw footage of police kettling students and knew it had to do with kettles or tea, something along those lines.

She turns to me and says, "Did you see that?

The police are tea-bagging students."

- Neil Delamere

MY teacher said: "Draw a square."

I drew a circle.

He said: "Idiot!

Stand in the corner."

I said: "Where's that?"

- Tim Vine

MARRIED men live 10 years longer.

You're not going to die early.

t's what she'd want.

- Jimmy Carr

I'VE been walking round looking for Mugger of the Year.

No-one's leapt out at me so far.

- Milton Jones

I BOUGHT one of those antibullying wristbands.

I say bought, I stole it off a short fat ginger kid.

- Jack Whitehall

INTERESTING style decision by Ant and Dec on Red Or Black.

Sort of Jedward does Reservoir Dogs.

- Chris Addison

PEOPLE mistake me for Bez from Happy Mondays.

Bez had the best drugs money can buy for 20 years.

I've been married 18.

Apparently the effect is the same.

- John Bishop

I HATE people who think it's clever to take drugs; like custom of-ficers.

- Jack Dee IF you permed a fox I think it'd look a bit like Mick Hucknall.

I actually think it'd be kinder to perm them than hunt them.

They'd be too embarrassed to go out and bother sheep.

- Sean Lock

PRINCE Charles has become the longest serving heir apparent.

Ironically Prince William's hair is not as apparent as it used to be.

- Frank Skinner

I WAS playing chess and my pal said: "Let's make this interesting."

So we stopped playing.

- Matt Kirshen

A TRAMP has been nominated to carry the Olympic torch.

He's going to carry it straight into Cash Converters.

- Jimmy Carr

DID Ireland join the Eurozone because they thought it was a boyband?

- Hugh Dennis

I WAS very reluctant to enter the ammunition eating competition but, in the end, I bit the bullet.

- Mathew Horne

I HAVE a liberal attitude to immigration.

That is, until some Lithuanian doorman refuses me entry to a nightclub.

"What do you mean, you won't let me in?

We let you in!"

- Ed Byrne

MY car has two temperature controls.

You can turn it up for the driver and down for the passenger.

Who'd use that?

Unless you're an Eskimo giving an African a lift.

- John Bishop

DUE to the economy, profiteroles will now be called deficiteroles.

- Tom Webb

I THOUGHT about going to the Olympics but I'm not paying £80 to see shooting in east London.

You can see that for free most nights.

- Chris Addison

Independent.co.uk

September 14, 2011 Wednesday 4:45 PM GMT

**Laughter really is the best medicine**  
**BYLINE:** AFP  
  
**SECTION:** HEALTH & FAMILIES  
  
**LENGTH:** 540 words

A rattling good laugh with friends will help you deal with pain thanks to opiate-like chemicals that flood the brain, according to a British study released on Wednesday.

Researchers carried out lab experiments in which volunteers watched either comedy clips from "Mr Bean" or "Friends," or non-humorous items such as golf or wildlife programmes, while their resistance to mild pain was monitored.

Another test was conducted at the Edinburgh Fringe Festival, where the volunteers watched either a stand-up comedy show or a theatrical drama.

In lab conditions, the pain came from a deep-frozen wine-cooler sleeve which was slipped onto the arm or from a blood-pressure cuff that was pumped to the threshold of tolerance.

For the Fringe Festival, the volunteers were asked to do a tough exercise - leaning against the wall with their legs at right angles, as if sitting on a straight-backed chair - before and immediately after the performance, to see if laughter had helped with the pain.

Just 15 minutes of laughter increased the level of pain tolerance by around 10 percent, the study found.

In the lab experiments, the neutral, non-funny programming had no pain-alleviating effect at all. Nor did watching drama at the Fringe Festival.

However, the study notes two important distinctions.

The only laughter that worked was relaxed, unforced laughter that creases the eyes, as opposed to a polite titter.

And this kind of belly laugh is far likelier to happen when you are with others, rather than being alone.

"Very little research has been done into why we laugh and what role it plays in society," said Robin Dunbar, head of the Institute of Social and Cultural Anthropology at the University of Oxford.

"Using microphones, we were able to record each of the participants and found that in a comedy show, they laughed for about a third of the time, and their pain tolerance rose as a consequence."

The protection apparently comes from endorphins, a complex chemical that helps to transmit messages between neurons but also dulls signals of physical pain and psychological stress.

Endorphins are the famous product of physical exercise - they help create the "buzz" that comes from running, swimming, rowing, yoga and so on.

In laughter, the release comes from an involuntary, repeated muscular exertion that comes from exhaling without drawing a breath, the scientists believe.

The exertion leaves us exhausted and thereby triggers the endorphins.

Great apes are also believed to be able to laugh but, unlike humans, they breathe in as well as out when they do so.

The investigators believe the experiments help to understand the physiological and social mechanism of how laughter is generated.

The group seems vital in unleashing the right kind of endorphin-making laughter, they contend.

Previous studies have focussed more on why humans laugh, as opposed to how they do it.

One theory is that laughter helps transmit mating signals or cements bonding between individuals.

Another idea is that, in a group setting, laughter promotes social cooperation and collective identity. It is thus an evolutionary tool to help survival.

The paper appears in Proceedings of the Royal Society B, a journal published by Britain's de-facto academy of sciences.

The Express

September 14, 2011 Wednesday   
U.K. 1st Edition

**It's no joke - a belly laugh really is good for you**  
**BYLINE:** By Jo Willey Health Correspondent  
  
**SECTION:** NEWS; 03  
  
**LENGTH:** 300 words

A GOOD laugh really is the best medicine, say scientists.

Belly laughing for 15 minutes releases endorphins that increase our threshold to pain and leave us with a feeling of euphoria.

It has to be a full-bodied laugh, however, and shared with others.

A polite titter on your own is unlikely to do any good at all.

After 10 years of research to find out what controls our tolerance to pain, scientists discovered one answer by sitting volunteers down in front of a TV to watch Mr Bean.

Another group watched factual shows and clips on how to play golf.

Others were sent into the "wild", to watch stand-up comedians or staged drama productions at last month's Edinburgh Fringe Festival.

The volunteers were then subjected to levels of pain - using ice-cold sleeves, blood pressure cuffs and arduous work-outs.

Those who had enjoyed a good laugh at either the TV or live comedy shows had at least 10 per cent more tolerance to pain than those who had watched the more serious fare on offer.

Professor Robin Dunbar, of Oxford University, said: "Very little research has been done into why we laugh and what role it plays in society.

We were able to record each of the participants and found that in a comedy show, they laughed for about a third of the time, and their pain tolerance rose.

"We think that it is the bonding effects of the endorphin rush that explain why laughter plays such an important role in our social lives."

Studies have shown that laughter is 30 times more likely to occur if someone is in a group rather than alone.

The fact that the endorphin rush appears to be limited to a good belly laugh, shared with others, suggests that laughter has evolved as a way of promoting socialising between humans, Prof Dunbar said.

His research is published in the journal Proceedings Of The Royal Society B.

The Mirror

September 14, 2011 Wednesday   
3 Star Edition

**PAIN'S A JOKE;**   
MEDICINE  
  
**SECTION:** NEWS; Pg. 2  
  
**LENGTH:** 65 words

LAughtEr really is the best medicine and helps humans deal with pain.

A belly laugh triggers the release of painkilling endorphins, according to research which tested pain tolerance after test subjects watched comedy on tV and at the Edinburgh Fringe Festival.

Professor robin Dunbar, of the university of Oxford, said: "We found that after watching a comedy show, viewers' pain tolerance rose."