**Why you should have a hot bath: It could be as effective as exercising to tackle type 2 diabetes**

* **Dr Steve Faulkner is a researcher who is based at Loughborough University**
* **He was previously behind a study that found bathing can burn 140 calories**
* **It causes changes to the inflammatory response similar to that of exercise**

By [Dr Steve Faulkner For The Conversation](http://www.dailymail.co.uk/home/search.html?s=&authornamef=Dr+Steve+Faulkner+For+The+Conversation)

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Stop what you're doing. Go and run a bath.

According to a whole host of scientific evidence, relaxing in the tub could be beneficial for your health.

Dr Steve Faulkner, a researcher at Loughborough University, says it may even have similar benefits to exercising - helping to prevent type 2 diabetes.

Here, in a piece for [**The Conversation**](https://theconversation.com/), he explains exactly how soaking yourself in a bath provides benefit to the body.

According to an array of scientific evidence, relaxing in the bath tub could be beneficial for your health - and even help you to lose weight

Many cultures swear by the benefits of a hot bath.

But only recently has science began to understand how passive heating - as opposed to getting hot and sweaty from exercise - improves health.

At Loughborough University we investigated the effect of a hot bath on blood sugar control and on the number of calories burned.

We recruited 14 men to take part in the study. They were assigned to an hour-long soak in a hot bath (40°C) or an hour of cycling.

The activities were designed to cause a 1°C rise in core body temperature over the course of one hour.

We measured how many calories the men burned in each session. We also measured their blood sugar for 24 hours after each trial.

Cycling resulted in more calories being burned than a hot bath, but bathing resulted in about as many calories being burned as a half-hour walk - around 140.

The overall blood sugar response to both conditions was similar, but peak blood sugar after eating was about 10 per cent lower when participants took a hot bath compared with when they exercised.

We also showed changes to the inflammatory response similar to that following exercise.

The anti-inflammatory response to exercise is important as it helps to protect us against infection and illness, but chronic inflammation is associated with a reduced ability to fight off diseases.

This suggests that repeated passive heating may contribute to reducing chronic inflammation, which is often present with long-term diseases, such as type 2 diabetes.

Bathing resulted in about as many calories being burned as a half-hour walk - around 140, a previous study noted

Passive heating for human health is a relatively new field of research, but some exciting results have emerged over the past few years.

Research from Finland, published in 2015, suggested that frequent saunas can reduce the risk of having a heart attack or stroke – at least in men.

The idea that passive heating can improve cardiovascular function received further support when the University of Oregon published a study the following year showing that regular hot baths can lower blood pressure.

In a second study, the same group looked at the mechanism responsible for these improvements.

They found that passive heating raised levels of nitric oxide, a molecule that dilates blood vessels and reduces blood pressure.

This has implications for treating high blood pressure and improving peripheral circulation in people with type 2 diabetes.

As type 2 diabetes is associated with reductions in nitric oxide availability, passive heating may help re-establish a healthier nitric oxide level and reduce blood pressure.

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In order to establish the effect of increasing body temperature passively, as opposed to through exertion, another study matched the intensity of heating from water immersion to that of running on a treadmill.

Water immersion resulted in a greater increase in body temperature compared with exercise, as well as a greater reduction in average arterial blood pressure.

This is important as a reduction in blood pressure is closely associated with a reduced risk of developing heart disease.

This study points to the promising effect that may result from passive heating. It also suggests some of the cardiovascular effects of passive heating may be comparable with those of exercise.

As well as the cardiovascular effects of passive heating, there is evidence to suggest that there may be beneficial metabolic effects as well – such as better control of blood sugar.

The first study, conducted by Philip Hooper of McKee Medical Center, Colorado, in 1999, investigated the effect of three weeks of hot-tub therapy in patients diagnosed with type 2 diabetes.

The results showed improvements in body weight, blood sugar control and a reduced dependence on insulin.

Hooper thought these effects may result from changes to blood flow as a result of passive heating, but he was unable to identify a specific mechanism by which their intervention led to these benefits.

Since this early investigation, few studies have investigated the potential for passive heating to improve blood sugar control in humans.

With our study, we have tried to reignite interest in the health benefits that may be linked to passive heating.

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