

人与兽哪个更有效率？ Man vs beast: Who is more efficient?

Hello. This is 6 Minute English from BBC Learning English. I'm Sam. And I'm Roy.

大家好。这里是 BBC 学习英语栏目的六分钟英语。我是萨姆。我是罗伊。

Whether it's salmon swimming upriver to lay their eggs or cheetahs running faster than a car, animals can do incredible things with their bodies.

鲑鱼逆流游到上游产卵，猎豹跑得比汽车还快。动物可以用它们的身体做一些了不起的事情。

Human bodies are no less incredible – just think of Olympic swimmers and sprinters.

人类的身体也很棒，只要想想奥运会的游泳和短跑运动员就知道了。

Our bodies work using just the energy provided by what we eat.

我们的身体只依靠我们所吃的食物所提供的能量来工作。

This means that the human body has to be incredibly efficient, using as little energy as possible to do what it needs to.

这意味着人体必须非常高效，用尽可能少的能量来完成需要做的事情。

Yet even with our efficient bodies, no-one can run as fast as a cheetah, not even Olympic champions!

然而，即使有了高效的身体，也没有人能跑得像猎豹一样快，即使是奥运会冠军也不行！

In this programme, we'll be asking: exactly how efficient is the human body?

在本期节目中，我们将探究：人体的效率到底有多高？

We'll be comparing human bodies' performance against each other, and against some animals too.

我们将比较不同人的身体效率，也会拿人与一些动物作比较。

And, of course, we'll be learning some new and useful vocabulary as well.

当然，我们还将学习一些新的词汇。

But before that I have a question for you, Roy. Efficiency involves an input and an output.

但在此之前我有个问题要问你，罗伊。效率涉及投入和产出。

It's about the relationship between the amount of energy coming in – in other words, the food we eat – and the amount of the energy going out – the usual movements and activities of day-to-day life.

效率涉及能量的输入与输出关系。换句话说，效率是指我们吃的食物和日常活动之间的关系。

So, according to this definition, which animal is the most efficient?

那么，根据这个定义，哪种动物是最高效的呢？

Is it a) an ant? b) a whale? or c) a human?

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是 a) 蚂蚁 b) 鲸鱼，还是 c) 人类？

Humans are the most efficient animal.

人类是最有效率的动物。

OK, Roy. I'll reveal the answer later in the programme.

好的，罗伊。我稍后会在节目中揭晓答案。

To find out more about how the human body works it's helpful to know how our species evolved.

为了进一步了解人体是如何工作的，了解人类是如何进化的很有帮助。

Here's Herman Pontzer, professor of evolutionary anthropology at Duke University, speaking with BBC World Service programme, CrowdScience.

以下是杜克大学进化人类学教授赫尔曼·庞瑟在BBC世界服务栏目的《大众科学》节目上所说的话。

Humans are remarkably efficient.

人类的效率非常高。

We walk on two very straight legs, if a human stands next to a dog, for example, the dog has got that funny bent classic dog leg shape, right?

我们用两条非常直的腿走路。例如，如果你站在一条狗旁边，就会发现狗的腿是弯曲的，对吗？

And that crouched posture is really typical of most animals.

而大多数动物都会保持这种蹲伏的姿势。

Humans have a very straight leg, and so because of that, and because our legs are pretty long for our body size – humans are part of the ape family – we're are efficient.

人类的腿非常直，又加之与同属灵长目的猿相比，我们的腿相对于身体来说是很长的，所以我们的身体是高效的。

Humans are apes and evolved from the same origin as gorillas and chimpanzees.

人类是类人猿，与大猩猩和黑猩猩有相同的祖先。

One big difference however is that humans walk upright on straight legs, whereas most animals are crouched – bent over at the knee and leaning forwards to the ground.

然而，人类的一个特殊之处就是人类直立行走，而大多数动物是蹲伏的，即膝盖弯曲，身体向前靠向地面。

This crouched posture is not an efficient way to move.

这种蹲伏的姿势不便活动。

Other animals, like dogs, have flat backs and move on four bent legs called doglegs – something bent in the shape of a dog's leg.

其他动物，比如狗，背部平坦，用四条弯曲的腿移动，也就是狗腿“dogleg”。这个词指弯曲成狗腿形状的物体。

The word dogleg can also mean a sharp bend in a road or path.

这个词也可以指路上的急转弯。

So, the design of the human body makes it efficient compared to some other animals – but how do humans compare with each other?

因此，与其他一些动物相比，人体的设计使其效率更高，那人类之间如何进行比较呢？

How do Kenyan athletes break long-distance running records, while many of us struggle to run for the bus?

为什么肯尼亚运动员能打破长跑纪录，而许多人赶个公交车就很累了？

The main reason, according to Loughborough University physiologist, Rhona Pearce, is training.

拉夫堡大学生理学家罗娜·皮尔斯的说，这主要是因为训练。

But there may be other factors too, as she explained to BBC World Service's, CrowdScience.

但也可能有其他因素，正如她在BBC世界服务栏目的《大众科学》节目中所说：

Age probably comes into it in that there's probably an optimal age for tendon elasticity that drops off as you get older, so probably there's a sweet spot in age for running economy.

年龄可能是个影响因素，因为肌腱弹性可能在特定的年龄之后就降低了，换句话说，随着年龄的增长，肌腱弹性会下降，所以可能存在一个黄金年龄段最适合跑步。

So, in terms of weight, it depends what your weight is made up of, if you've got more muscle mass that's going to help you, whereas if it's more fat then you've got to carry it.

体重也有影响，这取决于你的体重是由什么组成的。如果你肌肉更多，那是有好处的；如果你脂肪更多些，那就是累赘了。

Efficient running depends on having flexible muscles and tendons, and this flexibility drops off, or decreases, as we get older.

高效地奔跑需要灵活的肌肉和肌腱，但随着年龄的增长，他们会越来越不僵硬。

This means that, in terms of running, the body has an optimal age – the best age, or the age at which you are most likely to succeed.

这意味着，人有一个最适合跑步的年龄段，即最可能跑出名堂的年龄段。

Body composition also plays a part.

身体成分也起到了一定作用。

Efficient runners need high muscle mass – the amount of muscle in your body, as opposed to fat or bone.

高效率地奔跑需要很高的肌肉量，即身体中的肌肉而不是脂肪或骨骼含量。

So, training, age, muscle mass and genetics are all factors which, when they come together, produce a sweet spot – the best possible combination of factors and circumstances.

因此，训练、年龄、肌肉量和基因都是影响因素。综合考虑所有因素，就会得到最佳跑步年龄，即包含所有因素的组合的最佳状态。

And from the evidence it looks like my answer to your question was right, Sam.

从以上证据来看，你的问题我好像答对了，萨姆。

Ah yes, I asked which animal was the most efficient, and you said it was c) a human.

啊，是的，我问你哪种动物最有效率，你说是人类。

Well, I'm sorry to say but that was the wrong answer!

但是很抱歉，回答错误！

The funny thing is - and scientists still don't understand why - but the bigger the animal, the less energy it uses, kilo for kilo.

有趣的是，尽管科学家们不知道为什么，但动物越大，它消耗的能量就越少。体重增加一公斤，就少消耗一公斤能量。

So, the most efficient animal... ..is also be the biggest – a whale!

所以，最有效的动物就是最大的动物——鲸鱼！

OK, let's recap the vocabulary from the programme, starting with crouched – a position which is bent at the knee, leaning forward and closer to the ground.

好了，让我们回顾一下本期词汇，从“crouched”开始，指膝盖弯曲、身体前倾、靠近地面的姿势。

A dogleg can describe something which has a bent shape, especially a sharp bend in a road or path.

“dogleg”可以用来形容弯曲的东西，尤指路上的急转弯。

The optimal age to do something is the best age to do it.

做某事的“the optimal age”就是做某事的最佳年龄。

If something drops off, it decreases in quality or quantity.

某物“drop off”，意为它的质量或数量减少了。

A sweet spot is the best possible combination of factors or circumstances.

“a sweet spot”是各种因素或环境的最佳组合。

And finally, muscle mass is the amount of muscle in your body, as opposed to fat or bone.

最后，“muscle mass”是你身体中肌肉而不是脂肪或骨骼的含量。

Once again our six minute are up.

我们的六分钟又到了。

Bye for now! Bye!

下期再见！再见！