Hiccups are a rather annoying and strange phenomena. Most people will experience at least one in their lifetime. So will cats, dogs, horses and rats. Hiccups have even been observed in fetuses. While scientists know how these involuntarily contractions occur, they still remain baffled as to why.
Hiccups arise when the diaphragm – a dome-shaped muscle separating the chest from the abdomen – suddenly contracts. The medical term for hiccups is known as “singultus.” According to NHS choices, there aren’t any obvious triggers to getting hiccups, but they might be more likely to happen if you’re drinking alcohol, guzzling fizzy drinks, smoking or if you’ve eaten something too quickly.

Scientists don’t know why we hiccup as it doesn’t seem to serve any real purpose. We don’t even have a definitive way of getting rid of them. You probably have heard of numerous remedies for curing hiccups, the most popular being to hold your breath, but these are mostly based on anecdotal evidence.

Some researchers suggested that hiccups were a form of epilepsy, but while this may be an explanation for pathological hiccups, it doesn’t explain the presence of hiccups in a healthy individual.

In a 1997 study, published in the journal Gut, researchers Peter Kahrilas and Guoxiang Shi explore the “respiratory exercise hypothesis,” which suggests that hiccups prepare the fetus’ respiratory muscles for breathing after birth by strengthening them. Another theory suggests hiccups may be important for clearing meconium – the first feces that a newborn produces – that can sometimes be breathed in during times of fetal distress.

There are some obvious problems with this theory, which Daniel Howes points out in his 2012 paper published in Bioessays. According to Howes, it’s unlikely that the brief contractions that occur during a hiccup will have any significant beneficial effect on respiratory muscles. In the case of the meconium, Howes suggests hiccups would more than likely move it deeper into the airway.

In a 2003 study, also published in Bioessays, a group of scientists led by Christian Straus proposed that hiccups are a hangover from our evolutionary past. Straus et al. suggest that hiccups originate from our amphibian ancestors. The evidence they point to is between the mechanism of hiccups in humans and the breathing method of amphibians such as frogs. The contraction of the diaphragm and closure of the glottis allowed “primitive air breathers” that still possessed gills to breathe. This is similar to many modern amphibians, where the mysterious spasm that many of us find annoying is actually vital in amphibians to push water across their gills and stop water getting into the lungs.

In the study, researchers suggest that while we no longer have our frog-like breathing abilities, the brain circuitry controlling gill ventilation is still conserved in mammals today. Straus et al. point to other similarities between hiccupping and gill ventilation in animals like tadpoles as further evidence for their theory. The frequency of gill breathing in tadpoles is reduced by increased CO2 concentration and an increase in C02 is thought to decrease the frequency of hiccups, which is why some people recommend breathing in and out of a paper bag.

But why do we still carry this evolutionary relic? Researchers suggest hiccups could’ve adapted to help mammals learn to suckle. According to Straus et al., hiccups and suckling have similar
mechanisms and the hiccup neural pathway may have been maintained as the closure of the glottis helps the infant swallow milk and prevents milk from entering the lungs.

Howes, however, isn’t convinced by the ‘suckling’ hypothesis, arguing that the majority of the muscles triggered by the hiccup reflex are not involved in suckling. Howes proposes that hiccups are triggered by the presence of air in the stomach. Hiccups are far more common in infants than adults and Howes suggests hiccups is an important mechanism to help infants consume more milk as hiccups move swallowed air out of the stomach allowing them to consume a greater volume of milk.

Though these theories provide an interesting explanation as to why hiccups happen, there’s still isn’t a definitive answer. Don’t hold your breath for one in the mean time.