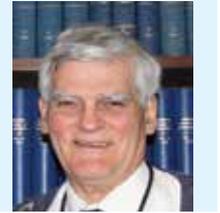


# Relativity: $E=mc^2$

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*"Put your hand on a hot stove for a minute, and it seems like an hour. Sit with a pretty girl for an hour, and it seems like a minute. That's relativity."*

Einstein had a gift for simplicity and also showed a great sense of humour, but we may be testing that beyond measure if we take the most famous equation ever...  $E=mc^2$ , and reduce it to a relatively simple report of the world's greatest sports event, The FIFA World Cup.

Thus: "**E**" becomes Expertise, "**m**" becomes Messi, "**c**" becomes control... *Expertise equals Messi multiplied by control by control.*

But you may argue that in fact Messi did not reach the expected levels of brilliance, so leave him out. No problem for there are two players of outstanding performance, both with names starting with "**m**"... Modric of Croatia was voted the Best Player overall, and Mbappe of France is regarded as the player to take over the Number One mantle. May be best for us to recover our sense of propriety and look more seriously at the original equation.

**E** represents Energy, measured in joules (I read that a joule is about the amount of energy required to lift an apple one metre!)

**m** represents mass, the resistance of a body to acceleration. Not the same as weight which is related to gravitational pull. Mass is also measured in kilograms.

**c** represents the speed of light. Why choose the letter c? There are two theories, one that it comes from the Latin word *celeritas* meaning swift, a good choice, but the second is more romantic in that it is told that Einstein asked a passing Mexican woman whether light was very fast, she answered "*si*".. and so...

The speed of light is indeed enormous, 300,000 kilometres per second. That brings the calculation of the energy possessed by a body into the realm of the extreme. Very small amounts of mass can be converted into absolutely huge amounts of energy. Nuclear fusion which transforms hydrogen into helium, the basis of the hydrogen bomb and the source of the energy of the sun, involves only 0,7 percent of the original rest energy of the hydrogen. An intriguing exercise carried out by Joshua Carroll shows that the average human body carries energy which is roughly the equivalent of 1.86 million kilotons of TNT.<sup>1</sup> Consider that

the bomb which destroyed Nagasaki was the equivalent of 21 kilotons of TNT explosive!! My goodness, the potential of humans is just beyond any imagination!

That potential was realised to some small measure when the Association geared up for World Oral Health Day. The message was delivered by members countrywide, "**Oral Health for a Healthy Life**".

Even Head Office swung into action with a team of our staff delivering the Oral Health message and bundles of Oral Care products to Grade R and Grade 3 children at Bathabile Primary School. As always, Colgate, our constant partners in striving for Oral Health, came to support our efforts and the children were delighted to receive a package full of oral health products to start them on the road to a healthy mouth in a healthy body. Congratulations to all who contributed, participated,



assisted and advised. The famous equation could be expressed: *Extraordinary = members multiplied by commitment by commitment.*

The burden of childhood caries in South Africa is forcefully recounted in this issue of the Journal. Extend those data into adulthood and we face an enormous challenge. Dental disease is exploding... not at a nuclear rate but nevertheless sufficiently fast to pose a frightening scenario. The Association has taken the lead but it will require the enthusiasm of members to make feasible the objective of achieving reasonable National Oral Health. Perhaps we can mobilise those impressive reserves of resting energy! A forceful kick to overcome the inertia of the caries football. Einstein may well have observed that here is an exercise in Relativity...

One dentist placing one restoration BUT many dentists actively engaged in Prevention.

In this year, the 100th anniversary of his birth, Nelson Rolihlahla Mandela has the last, and best, words: "*It always seems impossible, until its done!*"

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