

### **Attention to obesity studies also brings misinterpretation**

This continues to be an exciting era for TOS and its members. Our research is followed by the media and study-after-study is highlighted in the daily press. Our studies no longer garner attention only from our coworkers; there is now a great appetite for our findings among both the media and the public to which it speaks. The energy that it sparks is uplifting, but in this day of instant communications and vast internet commentary, all this attention does have a dark side. During the translation by the media there is often a loss of perspective of the scientific process that can result in over-interpretation or even misinterpretation of our most recent finding. Just last week the paper by Flegal et al in JAMA was front page news when they reported that overweight among US adults was not associated with increased mortality but was in fact associated with a small decrease in the risk of death, and that obesity (grade 1) was only associated with only a small increase in mortality. Considering that the percentage of the adult population that is overweight or obese is now the largest portion of US population, this justifiably received a great deal of media attention. It was an excellent study, but it should not have stood by itself as the single definitive study. Yet this is what happened in the media. Moreover, it was immediately over-interpreted by Campos in an Op-Ed piece in the New York Times as evidence that the obesity epidemic is a myth. Campos reasoned that if grade 1 obesity barely translates to increased mortality and that overweight actually provides some protection against mortality, then obesity is not a disease, much less a serious disease.

Most TOS members may ask, why wasn't this paper by Flegal and co-workers interpreted by the media in light of the many studies that came before it? One reason is that the media is not as well read on the topic as TOS members. For example, many TOS members know that that increased mortality is far more strongly associated with obesity in individuals under 60 years of age than it is among those over 65 years of age, which was confirmed by Flegal et al but not amplified in the media. We also are aware that in the US that there are dramatic increases in obesity among those younger adults, and a tripling of childhood obesity which makes early mortality all the more important. We are aware that Flegal et al could not easily address the issue of extreme obesity given the structure of the data in many of the papers that included in their review. Previous studies have shown that the most dramatic increases of mortality are associated with extreme obesity and the prevalence of extreme obesity among US adults has increased from less than 1% in 1962 to over 6% in 2010 and thus Flegal et al may have missed an important subgroup where mortality is more strongly influenced by obesity.

The differences in the knowledge base of the media writers and the public was highlighted in the Monday's study of the day. A recent survey performed by AP-NORC reported that the public is generally aware of only two negative health aspects of obesity. These are cardiovascular disease and diabetes. Thus a report that overweight protects against mortality and that mild obesity does confer much increase in mortality will have a huge impact on public opinion because these diseases are two of the major killers in the US and it is likely that many members of the media and the public may incorrectly reason that cardiovascular disease and diabetes must therefore not be increasing along with obesity. This difference in the knowledge base between the public and the scientist is something that TOS members often overlook, but shouldn't. Finally as TOS members, we know that morbidity is an equally important outcome. In fact, this has been pointed out by Flegal in an older paper which

analyzed the use of drugs which helped reduce the mortality rates among those suffering from cardiovascular disease and diabetes. In addition there is long list of obesity related morbidities which include hypertension, fatty liver disease, sleep apnea, joint disease, depression, and stress, to name just a few. While the deaths among an over-weight elderly population may not increase dramatically, it is also known that prevalence of morbidities does increase. These are serious health issues that decrease the quality of life and increase health care costs. In these difficult economic times, it should be pointed out that the large obesity related increases in morbidity increase the cost of health care for the US by 150 billion dollars per year, and thus are one of the largest single preventable contributors to the ever growing problems of funding Medicaid and Medicare.

The recent paper by Flegal et al constitutes one of the largest single summaries of data relating excess weight to mortality, but surely these finding do not constitute the final word on the relationship between overweight and health or between obesity and health. To be fair, the Flegal et al did state that more research is necessary to understand the impact of overweight and obesity. Those authors, however, provided little to no detail on what those studies should be and this is a point that we as experts in the field must take note of. When publishing our latest findings, TOS members need to step back from the blockbuster finding and also ensure that they provide sufficient context for their findings along with clear statements regarding the limitations of those finding. This is not an easy task, and I confess that I too often fail to remember to do this. In writing and reviewing the discussion sections, we need to be vigilant and make it clear what the limitations of our studies are and thus help the less expert individuals understand what our paper do and do not mean. This will not eliminate misinterpretation of our findings, but it should help.