

It's In Your Genes

by Noemie Bisserbe

Findings of a new study may lead to better treatment of obesity

BITTER-SWEET
According to World Health Organization figures, more than 32 million Indians suffer from diabetes



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IF YOU FEEL INDIANS HAVE A TENDENCY TO acquire that extra bit of flab around the waist, you're not alone. Now a scientific study has confirmed it, and here goes the verdict: Blame it on the genes! The gene sequence may have been identified, but an effective curative mechanism could still be a decade away. Yet, the new study is a shot in the arm for efforts to counter obesity and its dangerous corollaries such as cardiovascular diseases, diabetes, even bone problems.

The study, conducted by scientists from the UK, the US and France, has found that the 'fat' gene sequence was three times more common in UK citizens of Indian origin than in those of European origin. The research was carried out as part of the London Life Sciences Population study of environmental and genetic causes of cardiovascular disease, diabetes and obesity in 30,000 UK citizens of Indian Asian and European origin. Scientists at the Imperial College London, the University of Michigan in the US

and France's Pasteur Institute looked at the association between unique genetic markers and physical traits linked with obesity.

"We've found an association of a genetic variant near MC4R to be linked with insulin resistance, as well as waist circumference and weight," Jaspal Kooner, the paper's senior author from the National Heart and Lung Institute at Imperial College London, wrote in an email response to *BW*. "Insulin resistance is a precursor to diabetes and a major risk factor for cardiovascular disease. This is the second common genetic variant to be associated with obesity and the first in Indian Asians." MC4R is a human gene and defects in it can cause obesity.

According to Dr. Anoop Misra, director of the department of diabetes and metabolic diseases at New Delhi-based Fortis Hospital, the results of this study are significant and may show some light for discovery of new drugs. "There is today no clear-cut drug to treat obesity and existing treatments have significant side effects," he says. "Surgery is effective but very invasive."

Scientists may be able to use the gene sequence as a target to make new drugs. "However, new drug development is a long and risky process that can take 10-15 years," says Somesh Sharma, chief scientific officer of Mumbai-based Nicholas Piramal India. "While many genes have been discovered, translating this discovery into a meaningful treatment is another thing."

With these findings, gene therapy may even help prevent obesity for future generations. "By locking this gene, one could theoretically prevent patients from passing it on to their children," says Dr. M.G. Bhat, consultant for gastroenterology and laparoscopy at Bangalore's Wockhardt Hospital. "Gene therapy may be the future." However, we still know very little on how gene therapy can help treat obesity as most clinical studies initiated are targeted at cancer.

According to K.V. Subramaniam, president and CEO of Reliance Life Sciences, the possibility of replacing the polymorphisms that increase the risk to developing obesity is still a dream. "Gene therapy is in its nascent stage in human obesity treatment," he says.

There are few statistics available on the incidence of diabetes and cardiovascular diseases in India. According to the World Health Organization, 32 million Indians suffered from diabetes in 2000, and this figure is expected to touch 79 million by 2030. The prevalence of type-II diabetes has more than doubled in India's urban areas in the past 20 years and the prevalence of hypertension increased from 1-per cent in 1950 to 10-30 per cent in 2000.

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