

# Research & Reviews: Journal of Medical and Health Sciences

## Causes, Diagnosis and Treatment of Obesity

Dipika Rungta\*

Birla Institute of Technology Mesra, Ranchi, Pin: 835215, India

### Short Communication

Received: 05/05/2015  
Revised: 28/05/2015  
Accepted: 03/06/2015

#### \*For Correspondence

Dipika Rungta, Birla Institute of Technology Mesra, Ranchi, Pin: 835215, India,  
Tel: 9835027742; E-mail: dipikarungta1991@gmail.com  
Keywords: Obesity, Body Mass Index, Childhood Obesity, Drinking water, Blood pressure

### SHORT COMMUNICATION

Overweight and Obesity are the most common and alarming health disease, now a days, especially in the highly developed countries. A survey has reported that the main cause behind this disease is overeating and underactivity. People in developed nations have started to rely on machinery things for their daily jobs. This has led to the prevalence of obesity factors among individuals of all age groups [1].

It has been seen that obese mother may become the reason for congenital defects or structural birth defects during pregnancy. The maternal overweight has been seen to develop cardiovascular and neurological defects in the fetus. The defects may also include neural tube defects. Hence, the gynecologists must monitor an overweight mother with suitable treatments in order to reduce the pregnancy defects [2].

Kurylowicz, in his study has found an exclusive measure to reduce obesity. As we all know that there is a limited number of anti obesity treatments. Hence, the paper provided the information of how we can reduce overweight without any surgical method. It showed that the extra fat in the body can be oxidized by the procedure of thermogenesis via Beta-Adrenergic and Thyroid Hormone Receptors Agonists. Here, high energy expenditure was the main focus. However, this method became successful in lower group of mammals and not in humans [3]. It has also been surveyed that individuals with Systemic Lupus Erythematosus has higher risks of obesity and cardiovascular diseases [4].

Pbert et al. found that there may be a possibility to treat obese individuals in the adolescent age by designing a multi level intervention procedure but in the child care settings, i.e., pediatric primary care setting [5]. Fernandez-Bustamante et al. has found that in the exhaled breath which contains nitrate oxidized metabolites, the concentration of metabolites is found to be more in obese individuals as compared to mild obese and healthy ones. In this paper, the direct connection between nitrate metabolites concentration and BMI has been shown [6].

Obesity is related to several cardiovascular diseases. The paper Farrag et al. has showed that there is an increased probability of occurrence of heart and other cardiovascular diseases among morbidly obese individuals [7]. A positive effect of aerobic exercise has been seen in obese individuals with coronary diseases. It has been seen that these individuals can lower their cardiovascular disease consequences in a higher rate [8]. The prevalence of obesity is mainly due to genetic as well as environmental factors. Diet and Lifestyle of any individual has a great significance on the level of obesity he/she is having. Martins, in his paper has revealed that unhealthy neurogenomic diets have a greater tendency to increase BMI in obese individuals. This may result in higher rate of adiposity [9].

A change in lifestyle and diet of the individuals has been a successful treatment of weight loss in a population and community [10]. It has been seen that obese children have more tendency to get musculoskeletal diseases such as bones fractures, etc. This study was reported in the paper Aldo et al. [11]. Individuals with high obesity and overweight have been seen to have musculoskeletal pain [16]. Physical activity, diet and lifestyle are the major factors that are responsible for the occurrence of obesity

[12]. If these factors are not taken care of, they may lead to severe obesity, even in the rural area's population [13]. A healthy and active lifestyle among children has been reported in the areas with healthy population. Same was reported among Czech children in the paper Bunc [14]. It has been seen that during Methicillin-Resistant Staphylococcus aureus Pneumonia, the effects of drugs like Linezolid and Vancomycin have been seen to be decreased due to high concentration of fats in the body cells. This was reported in the paper Caffrey et al. [15,16]. There is a provision of Obesity Management in the highly developed countries, where, the obese individuals are given follow-ups for regular exercise and healthy diets by the physicians available there, in a routinely manner [17]. A study made by Hussein et al. has show that purslane seeds fixed oil has been seen to reduce body weight, cholesterol, triglycerides and glucose content in the blood when treated to obese diabetic mice [18]. In the workplaces with high work stress have been seen to have associated with obesity and its related disorders like cardiovascular diseases including increased blood pressure, heart arrest, depression, increased blood sugar, high calorie food intake, etc [19]. In order to participate in weight loss programs, various financial incentives design have been made in order to help the obese individuals to manage their income in the anti obesity treatment's procedures [20]. In the patients having morbid obesity and diabetes mellitus, it has been observed that polymorphisms occur in the Angiotensinogen Gene M235T and T174M. This finding gives evidence that obesity also occurs due to genetic factors. Marta e al. in their paper has inferred this factor as an important reason for the occurrence of obesity [21].

Diet is the most important factor that has been seen to influence fat content in the body. Various dietary elements are suggested by the doctors, in order to reduce obesity in the individuals. Among these compounds, dietary phytochemicals have been regarded to be acting as Cancer preventive agents. As we already know that obesity may also lead to cancer [22]. One such chemical that has been found is ethanol extract of the pinus koraiensis leaves. From the paper Lee et al., it has been inferred that the intake of this chemical activates AMPK signaling which leads to anti obesity effects. This results in high fat oxidation in the body cells [23].

In the paper Saleh et al., it has been found out that serum irisin has positive effects against metabolic syndrome occurring due to the effects of obesity. It has been seen that irisin acts against insulin resistance in the body [24]. Childhood obesity has been seen to occur due to genetic factors. In case of parental obesity, the risk of obesity and related disorders in infants is in higher possibility. Due to this, in many countries, children are given special anti obesity treatments in order to fight with obesity related complications in such a smaller age [25]. It has also been analyzed that military personnels are also suffering from obesity and hypertension. For them, the effects remain undiagnosed leading obesity related diseases. This was reorted in the paper Aliyu et al. [26]. Obesity may also lead to chronic back pain that may reside to a minimum of 3 months. The pain becomes so unbearable that it gets into occupational repeatative starin especially in the case of sports injury [27]. Microbiomes in guts have also been seen to increase their effects in obese individuals [28]. Physical fitness is an important aspect to reduce weight in obese individuals. People due to their busy schedule, generally take large meals in the night [29].

Life expectancy of HIV-infected patients has improved within the recent decade with the utilization of antiretroviral medical care. Hence, a lot of HIV-infected patients with chronic co-morbidities square measure being followed by completely different specialities. Polygenic disorder and fatness square measure two of the co-morbidities. The researchers tend to checked out the result of bariatric surgery for three HIV-infected patients. They tend to ended that bariatric surgery is safe and may scale back pill burden [30]. In a paper Becket et al., a majority of persons with polygenic disorder area unit corpulent is in line with a previous study that eighty fifth of patients with type- II polygenic disorder were overweight or corpulent [31].

The findings in Carvalho et al. counsel there's an association between wave type pattern of viscus veins and also the degree of unwellness disease [32].

Obesity could be a advanced disorder and could be a major risk issue related to the incidence of endocrine resistance (IR), diabetes, disorder (CVD) and different metabolic disorders. The endocrine paradigm suggests that visceral fat in fat, consisting primarily of adipocytes, secretes numerous pro-inflammatory adipokines like neoplasm sphacelus issue (TNF), leptin, visfatin, resistin, and IL-6 making a state of native inflammation any leading to chronic general inflammation and fast the events resulting in general IR, polygenic disorder and metabolic syndrome [33].

Recently, it absolutely was recognized that T2D is characterised by impaired metabolic process additionally to glucotoxicity. Overconsumption of energy-dense foods leads to excessive fat deposition and increased internal secretion resistance. Free fatty acids (FFAs) delivered to the liver via the vein lead to liver disease. FFAs spill into the circulation leading to lipotoxicity of organs like exocrine gland, heart and muscles initiating a viscous cycle of fat injury, inflammation, worsening internal secretion resistance and cell internal secretion secretion, and ultimately manifestation of T2D [34]. According to the paper Zhao et al. some girls of procreative age in southern China had MS, and a big, and maybe growing, proportion of ladies were overweight. Less exercise contributes to the upper prevalence of MS and overweight/obesity among rural residents than urban residents [35].

The results in paper Batsh et al. support the a lot of useful impact of telmisartan than taurine in rotund rats by up SBP, additionally to bettering hyperglycaemia , dyslipidemia,( metabolic disturbances) and decreasing plasma ADMA however increasing excretory organ DDAH catalyst activities (vascular complications) a minimum of partially, by up endocrine sensitivity and decreasing aerobic stress, suggesting the attainable use of telmisartan as a protecting strategy against vascular complications associated with fat [36].

Furthermore, a highly unhealthy lifestyle might need an impact conjointly on the biological process standing of patients with brain disorder. Whereas the overall angle of patients with brain disorder toward sports is positive, their condition might inhibit patients to urge concerned in any sort of physical activity for worry injury. To date, the prevalence of fleshiness in patients with brain disorder has solely been evaluated in adults, the speed of that doesn't seem to take issue considerably from that of general population [37].

Thylakoids else to food in adjunct to mode intervention could also be useful in sanctionative overweight subjects to slim down by suppression of epicurean hunger [38]. NAFLD is that the most typical chronic disease, oftentimes related to polygenic disorder. Each of those internal secretion resistant states have augmented vessel risk factors associated, and a rife reason for mortality in these diseases. Microvesicles square measure heterogonously sized, lipid made spheres free by cells upon activation and caspase-mediated cell death. Proof is constant to accumulate of microvesicles being not solely markers of illness severity however as conjointly having a purposeful role within the pathophysiology of illness progression [39].

Because of the speedy development of obesity in genetically stable populations, the childhood obesity epidemic may be primarily attributed to adverse environmental factors that easy though politically tough solutions exist. Researchers have found plant-based diets that limit further sugar and meat, like the Mediterranean diet, decrease the chance and incidence of chronic diseases together with polygenic disorder, CVD, and high blood pressure. Additionally these diets will increase energy levels and sense of well-being and if started throughout childhood, could stop chronic illness in adults [40].

## REFERENCES

1. Stapleton P (2015) Beliefs about Causes of Obesity: A Comparison of Australian Doctors, Psychologists and Community Members. *J Obes Weight Loss Ther* 5:246. doi: 10.4172/2165-7904.1000246
2. Fernández RAH, Collazo LV, Hernández SC, Cruz AL (2015) Relationship between Maternal Obesity and Congenital Malformation in a Subpopulation of Havana. *J Diabetes Metab* 6:498. doi: 10.4172/2155-6156.1000498
3. Kurylowicz A (2015) Stimulation of Thermogenesis via Beta-Adrenergic and Thyroid Hormone Receptors Agonists in Obesity Treatment – Possible Reasons for Therapy Resistance. *J Pharmacogenomics Pharmacoproteomics* 6:145. doi: 10.4172/2153-0645.1000145
4. Bernante P (2015) The Impact of Obesity and Weight Loss on Patients with Systemic Lupus Erythematosus: Is There a Role for Bariatric Surgery?. *Rheumatology (Sunnyvale)* 5:145. doi: 10.4172/2161-1149.1000145
5. Pbert L, Wang ML, Druker S, Jackson EA, Rosal MC (2015) Designing and Testing the Feasibility of a Multi-level Intervention to Treat Adolescent Obesity in the Pediatric Primary Care Setting. *J Child Adolesc Behav* 3:196. doi: 10.4172/2375-4494.1000196

6. Fernandez-Bustamante A, Seres T, Agazio A, Pennington AT, Christians U, et al. (2015) Exhaled Breath Condensate Nitrate Levels are Inversely Associated with the Body Mass Index of Patients without Respiratory Disease. *J Pulm Respir Med* 5:243. doi: 10.4172/2161-105X.1000243
7. Farrag A, Eraky AE, Aroussy WE, Sayed G, Mahrous A, et al. (2015) Obesity and Other Cardiovascular Risk Factors in Egyptian University Students: Magnitude of the Problem. *Epidemiology (sunnyvale)* 5: 181. doi: 10.4172/2161-1165.1000181
8. Hussein N, Thomas M, Prince D, Zohman L, Czojowski P (2015) Effect of Combined Resistive and Aerobic Exercise versus Aerobic Exercise Alone on Coronary Risk Factors in Obese Coronary Patients. *J Clin Exp Cardiol* 6:361. doi: 10.4172/2155-9880.1000361
9. Martins IJ (2015) Unhealthy Nutrigenomic Diets Accelerate NAFLD and Adiposity in Global communities. *J Mol Genet Med* 09:162. doi: 10.4172/1747-0862.1000162
10. Carney D, Schultz S, Lim J, Walters W (2015) Successful Medical Weight Loss in a Community Setting. *J Obes Weight Loss Ther* 5: 248. doi: 10.4172/2165-7904.1000248
11. Aldo C, Nicolas S, Pierre-Yves Z, Stephane T, Aline B, et al. (2015) Obese Children Sustain Significantly More Both Bones Forearm Fractures When Compared to Non-Obese Children. *Pediatr Therapeut* 5:232. doi: 10.4172/2161-0665.1000232
12. Faghri P, Stratton K, Momeni K (2015) Sedentary Lifestyle, Obesity, and Aging: Implication for Prevention. *J Nutr Disorders Ther* 5:e119 doi: 10.4172/2161-0509.1000e119
13. Alqahtani N, Scott J, Ullah S (2015) Physical Activity and Sedentary Behaviors as Risk Factors of Obesity among Rural Adolescents. *J Child Adolesc Behav* 3:185. doi: 10.4172/2375-4494.1000185
14. Bunc V (2015) Active Lifestyle and Health State Determinants in Czech Children. *J Child Adolesc Behav* 3:181. doi: 10.4172/2375-4494.1000181
15. Caffrey AR, Noh E, Morrill HJ, LaPlante KL (2015) The Effects of Obesity on the Comparative Effectiveness of Linezolid and Vancomycin in Suspected Methicillin-Resistant Staphylococcus aureus Pneumonia. *Adv Pharmacoepidemiol Drug Saf* 4:176. doi: 10.4172/2167-1052.1000176
16. Faghri PD, Chin WSY, Huedo-Medina TB (2015) The Link between Musculoskeletal Pain, Lifestyle Behaviors, Exercise Self-Efficacy, and Quality of Life in Overweight and Obese Individuals. *Int J Phys Med Rehabil* 3: 255. doi: 10.4172/2329-9096.1000255
17. Schuster RJ, Cherry CB, Zelbar-Sagi S, Yeshua H, Matalon A et al (2014) A Cross-Cultural Analysis of Physician Management of Obesity. Comparing the US, France, Israel and Japan: Little Interest and Little Success. *Primary Health Care* 4:166. doi: 10.4172/2167-1079.1000166
18. Osman SM, Hussein MA (2015) Purslane Seeds Fixed Oil as a Functional Food in Treatment of Obesity Induced by High Fat Diet in Obese Diabetic Mice. *J Nutr Food Sci* 5:332. doi: 10.4172/2155-9600.1000332
19. Faghri P, Mignano C (2013) Overweight and Obesity in High Stress Workplaces. *J Nutr Disorders Ther* 3:e110. doi: 10.4172/2161-0509.1000e110
20. Hashemi A, You W, Boyle KJ, Parmeter CF, Kanninen B, et al. (2015) Identifying Financial Incentive Designs to Enhance Participation in Weight Loss Programs. *J Obes Weight Loss Ther* 5:247. doi: 10.4172/2165-7904.1000247
21. Marta P, Tomasz F, Jan K, Przemyslaw A, Jacek C, et al. (2015) Angiotensinogen Gene M235T and T174M Polymorphisms in Patients with Morbid Obesity and Type 2 Diabetes Mellitus. *J Diabetes Metab* 6:479. doi: 10.4172/2155-6156.1000479
22. Shirakami Y, Sakai H, Kubota M, Kochi T, Shimizu M (2015) Dietary Phytochemicals as Cancer Preventive Agents: Efficacy and Mechanisms. *J Bioanal Biomed* 7:040-049. doi: 10.4172/1948-593X.1000122
23. Lee MS, Cho SM, Kim JS, Kim SH, Lee HJ (2015) Ethanol Extract of the Pinus koraiensis Leaves Anti-Obesity and Hypolipidemic Effects by Activating the AMPK Signaling. *J Nutr Food Sci* 5:349. doi: 10.4172/2155-9600.1000349

24. Saleh O, Majeed MJ, Oreaby GM (2014) Descriptive Consideration of Serum Irisin Levels Various Factors: Obesity, Type 2 Diabetes Mellitus, Pre-Diabetic Status, Gender, and Athletics. *J Diabetes Metab* 5:471 doi: 10.4172/2155-6156.1000471
25. Fuiano N, Lonero A, Diddi G, Luce V, De Palma F et al. (2015) Body Mass Index in Children and Their Parents: A Cross-Sectional Study in a Study Population of Children from Southern Italy. *J Nurs Care* 4:225. doi: 10.4172/2167-1168.1000225
26. Aliyu SU, Oyeyemi AY, Udoh DG, Oyeyemi AL (2014) Prevalence of Overweight/obesity and Undiagnosed Hypertension among Military Personnel in Maiduguri, Nigeria. *J Nov Physiother* 4:237. doi: 10.4172/2165-7025.1000237
27. Sumchai AP (2015) Chronic Low Back Pain - The Exercise Prescription. *J Nov Physiother* 5:239. doi: 10.4172/2165-7025.1000239
28. Sulaiman I, Farouk RM, Aliya IS, Adzim MKR, Uday YH Abdullah, et al. (2014) Microbiota in Obesity . *Interdiscip J Microinflammation* 1:118. doi: 10.4172/ijm.1000118
29. Nikkhah A (2014) Avoid Large Night Meals to Stay Fit. *J Obes Weight Loss Ther* 4:e115. doi: 10.4172/2165-7904.1000e115
30. Seechurn S, Alfa-Wali M, Ayodeji O, Thompson J, Kapembwa M (2014) Obesity and HIV Infection-is there a Role for Bariatric Surgery in Treatment?. *J AIDS Clin Res* 5:402. doi: 10.4172/2155-6113.1000402
31. Becket G (2015) Evaluation of a Retrospective Drug Utilization Review Program for the Treatment of Plaque Psoriasis: A Pilot Study. *J Pharma Care Health Sys* 2:e121. doi: 10.4172/2376-0419.1000e121
32. Carvalho CF, Jerico MM, Cogliati B, Cintra TCF, Chammas MC (2015) Association of Doppler Wave Pattern of Hepatic Veins and Fatty Liver Disease Degree. *J Liver* 4:174. doi: 10.4172/2167-0889.1000174
33. Jo Lynne Robins, Qing Melissa Cai, Youngman Oh (2014) The Impact of Neutrophil Proteinase 3 on IGFBP-3 Proteolysis in Obesity. *Intern Med* S6:003 doi: 10.4172/2165-8048.S6-003
34. Saboor Aftab SA, Reddy N, Smith E, Barber TM (2014) Obesity and Type 2 Diabetes Mellitus. *Intern Med* S6:002. doi: 10.4172/2165-8048.S6-002
35. Zhao X, Ni R, Li Y, Li L, Huang J, et al. (2014) Prevalence of Metabolic Syndrome and Overweight/Obesity among Chinese Women of Childbearing Age: A Cross-Sectional Epidemic Study. *J Anesth Clin Res* 5:444. doi: 10.4172/2155-6148.1000444
36. Volgyi E, Wheless JW (2014) Osteoporosis and Obesity in Epilepsy Patients. *J Osteopor Phys Act* 2:e111. doi: 10.4172/2329-9509.1000e111
37. Al-Ateeq MA, Al-Hargan MH (2014) Relationships between Overweight and Obesity with Preferred Mode of Transportation and Use of Neighborhood Facilities in Riyadh, Saudi Arabia. *J Obes Weight Loss Ther* 4:240. doi: 10.4172/2165-7904.1000240
38. Stenblom EL, Montelius C, Erlandsson D, Skarping L, Fransson M, et al. (2014) Decreased Urge for Palatable Food after a Two-month Dietary Intervention with Green-plant Membranes in Overweight Women. *J Obes Weight Loss Ther* 4:238. doi: 10.4172/2165-7904.1000238
39. Welsh J, Holloway J, Englyst N (2014) Microvesicles as Biomarkers in Diabetes, Obesity and Non-Alcoholic Fatty Liver Disease:Current Knowledge and Future Directions. *Intern Med* S6:009. doi: 10.4172/2165-8048.S6-009
40. Haney B (2014) Childhood Obesity: Solutions to Address a Growing Health Concern. *J Preg Child Health* 1:114. doi: 10.4172/2376-127X.1000114