



Diabetes Treatment in Older Adults

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PERSPECTIVE

The ageing of the world's population, as well as the ongoing diabetes and obesity epidemics, are having a global influence on healthcare. There will be 2 billion persons aged 60 and older by 2050, with at least one out of every four having diabetes and being overweight or obese. Diabetes is a chronic, progressive disease whose prevalence rises with age. Younger persons are more likely to have less multimorbidity and be at risk for physical or cognitive dysfunction; however some do have more complicated clinical situations. Due to the overlap with the ageing process and age-related or age-dependent disorders, their elder counterparts typically encounter extra obstacles beyond regular diabetes-related issues. Diabetes-related major lower-extremity amputation, myocardial infarction, visual impairment, and end-stage renal disease, cognitive dysfunction, falls, fractures, dementia, cardiovascular (CV) events, malignancies, depression, physical disability, sarcopenia, and frailty, all of which are linked to increased mortality, are all more common in the elderly. Furthermore, applying traditional pharmacologic therapies to coexisting multimorbidity may eventually lead to polypharmacy, which comes with higher costs and a higher risk of non-adherence and medication-related problems. As a result, all of the above characteristics must be considered while treating diabetes in older persons, as they can obstruct diabetes self-management and increase treatment mistakes, hypoglycemia, and poor glycemic control.

Modifications to one's lifestyle (a balanced diet, physical activity, and exercise) are doable, and older persons can still benefit from small-scale weight loss. Older adults exhibited higher rates of lifestyle engagement and self-monitoring than younger adults, according to the Montana Cardiovascular Disease and Diabetes Prevention Program. In a recent study, 160 mildly to moderately weak, inactive older individuals with obesity were randomly assigned to aerobic, resistance, or combination exercise. While this RCT did not focus solely on diabetes, the most effective therapies for increasing functional status were purposeful weight loss and a combination of aerobic and resistance training. We urge that two ongoing RCTs evaluating dietary protein and multi-modal treatments for frailty in older individuals with type 2 diabetes be reviewed in the future (T2D).

The prevalence of glucose intolerance increases with age, and postprandial hyperglycemia is a common hallmark of diabetes in the elderly. As beta-cell compensatory capability declines with age, insulin resistance develops, manifesting as postprandial hyperglycemia in the elderly. As a result, the incidence varies depending on the tests employed to diagnose older persons during

diagnosis. A third of people who have their A1C or fasting plasma glucose (FPG) levels checked are unable to receive a diagnosis.

Changes in body composition accompany ageing, with a loss in lean mass and skeletal mineral density *vs.* an increase in body fat. Loss of muscle mass, which leads to sarcopenia and reduced muscle functioning, is connected with a higher risk of developing diabetes, whereas a change in total body fat content is associated with a higher risk of developing diabetes. Diabetes is frequently associated with complications and/or comorbidities in older individuals, with at least one in 60% and four or more in 40% of those with diabetes. Cognitive impairment, which has been linked to frailty, is a geriatric syndrome that typically occurs in diabetic individuals. Frailty and cognitive decline share common molecular causes (oxidative stress, poor repair processes, autophagy), are closely related, and both are linked to ageing. Frailty refers to a person's heightened vulnerability to stressors and external insults, which puts them at a higher risk of negative outcomes like disability, hospitalisation, and death. Midlife diabetes and hypertension, in particular, have been linked to late-life brain atrophy and cognitive impairment. Because diabetes and its complications increase the incidence of all-cause dementia, Alzheimer's disease, and vascular dementia when compared to the rates of the same disturbances in people with normal glucose tolerance, older adults with diabetes should be carefully screened and monitored for cognitive impairment [1-5].

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Received: 30 January, 2022, Manuscript No. jggr-22-15765; **Editor assigned:** 01 February, 2022, PreQC No. P-15765; **Reviewed:** 15 February, 2022, QC No. Q-15765; **Revised:** 20 February, 2022, Manuscript No. R-15765; **Published:** 26 February, 2022, DOI: 10.35248/2167-7182.22.11.597

Citation: Vasudev J (2022) Diabetes Treatment in Older Adults. *J Gerontol Geriatr Res.* 11: 597.

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