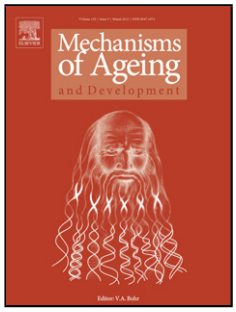

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Mitochondrial activity and dynamics changes regarding metabolism in ageing and obesity

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Graphical abstract

Graphical abstract. Mitochondrial homeostasis is basic to maintain a balanced metabolic activity in fat accumulating tissues including adipose tissue, muscle and liver. Ageing and the decay of oestrogens produce an unbalance in mitochondrial homeostasis causing the accumulation of damaged mitochondria as giant or small and damaged mitochondria. Decay of mito- and autophagy processes is also affected. These events produce the reduction of respiration, membrane potential and the increase of reactive oxygen species. Prolongevity factors such as calorie restriction, exercise or several nutraceutical such as polyphenols can reduce mitochondrial dysfunction by maintaining mitochondrial biogenesis, fusion/fission balance and mito- and autophagy during ageing preventing then fat accumulation.