Metformin supplementation and life span in Fischer-344 rats.

Calorie restriction (CR) has been known for more than 70 years to extend life span and delay disease in rodent models. Metformin administration in rodent disease models has been shown to delay cancer incidence and progression, reduce cardiovascular disease and extend life span. To more directly test the potential of metformin supplementation (300 mg/kg/day) as a CR mimetic, life-span studies were performed in Fischer-344 rats and compared with ad libitum feeding and CR (30%). The CR group had significantly reduced food intake and body weight throughout the study. Body weight was significantly reduced in the metformin group compared with control during the middle of the study, despite similar weekly food intake. Although CR significantly extended early life span (25th quantile), metformin supplementation did not significantly increase life span at any quantile (25th, 50th, 75th, or 90th), overall or maximum life span (p > .05) compared with control.