



## Historical Timeline – Evolutionary Mechanics Theories and Associated Theories of Biological Aging

<b>Date</b>	<b>Traditional Evolutionary Mechanics And Non-Programmed Aging</b>	<b>Alternative Evolutionary Mechanics And Programmed Aging</b>
Pre-1859		Life span not distinguished from other species-unique characteristics
1859	Darwin publishes traditional mechanics theory – mandates non-programmed aging	Darwin’s critics note apparent observed conflicts regarding life span
1882		Weismann’s programmed death theory (no evolutionary mechanics support)
1945	Modern synthesis and neo-Darwinism codify traditional mechanics theory	
1952	Medawar’s concept – Evolutionary effect of aging small or negligible after reproductive maturity	
1952	Mutation accumulation theory - Medawar	
1957	Antagonistic pleiotropy theory - Williams	
1962		Group selection mechanics theory – Wynne-Edwards, others
1964		Kin selection mechanics theory – Hamilton, others
1975	Disposable soma theory – Kirkwood, Holliday	
1975+		Gene-oriented mechanics theories – Dawkins, others
1977		Discovery of complex octopus suicide mechanism - Wodinski
1988		Kin selection based aging theory - Libertini
1996+		Pro-aging genes discovered – Kenyon, others
1996+		Evolvability mechanics theories –Wagner, others
1997+		Evolvability-based aging theories – Skulachev, Goldsmith
1999+		Discovery of life span regulation controlled by sensing of external conditions in various organisms
2004+		Group selection based aging theories – Mitteldorf
2009	Most gerontologists continue to believe non-programmed theories.	Extensive and increasing interest in alternative mechanics but no consensus. Steadily increasing observational evidence for programmed aging