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## Enhanced prediction of the population at risk of atherothrombotic disease

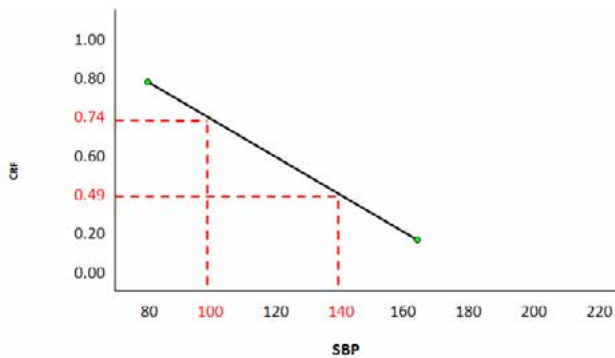
**William E Feeman Jr.**  
Wood County Hospital, USA

**Statement of the Problem:** To be able to prevent atherothrombotic disease (ATD), one must be able to predict the population at risk of ATD. Many risk predictors have been advocated for such prediction, but none have been universally accepted.

**Methodology & Theoretical Orientation:** The Framingham Heart Study has demonstrated that the population that develops ATD differs from the population that does not by the severity of certain ATD risk factors and the duration during which those risk factors have been operative. The author has examined his entire ATD population to determine the constellation of ATD risk factors that separates population from the population that did not develop some form of clinical ATD.

**Findings:** The population at risk of ATD is characterized by cigarette smoking, dyslipidemia, and (often) hypertension, with some contribution from the very high blood sugar levels of uncontrolled diabetes. These risk factors are not independent, but rather dependent, interacting with one another leading to ATD. Dyslipidemia is defined as a ratio between LDL- and HDL-cholesterol (Cholesterol Retention Fraction, or CRF, defined as [LDL-HDL]/LDL). The predictive tool is a graph with the CRF on the ordinate and systolic blood pressure (SBP) on the abscissa. The graph exhibits a threshold line with CRF-SBP co-ordinates (0.74, 100) and (0.49, 140), above which lie the CRF-SBP of 93% of all the ATD patients in the author's practice. The outcomes of those patients can be found in the Table. Further fine-tuning can be done by stratifying the CRF by SBP or by LDL-cholesterol. Any therapy that brings the CRF-SBP plot below the threshold line results in plaque stabilization/regression in a minimum average of 75% of cases.

**Conclusions:** The population at risk of ATD is predictable and hence, ATD is preventable.



Precipitation Method of HDL Cholesterol Measurement

		ATD w/r to ASR Line							
		1974-2003							
		Above ASR Line				Below ASR Line			
		Average Age of		Pass		Fail		Pass	
w	ATD Onset	Total Patients	128	120	90	20	14	8	
	Total Patient Years	6059	8556	5813	1174	1041	821		
	Ave. Age of ATD Onset	53	68	69	59	74	78		
MISO Onset	Total Patients	38	42	32	6	5	1		
	Total Patient Years	2888	2988	2420	382	400	78		
	Ave. Age of ATD Onset	62	73	79	64	80	78		
Death	Total Patients	48	64	47	12	11	4		
	Total Patient Years	1151	4780	3805	815	879	374		
	Ave. Age of ATD Onset	64	76	81	68	80	94		
MISO	ATD Onset	Total Patients	65	56	137	18	15	74	
	Total Patient Years	5852	5908	5885	1149	1003	294		
	Ave. Age of ATD Onset	59	70	73	64	67	78		
MISO Onset	Total Patients	22	24	48	5	7	10		
	Total Patient Years	1304	1800	2921	440	552	125		
	Ave. Age of ATD Onset	79	79	90	73	78	82		
Death	Total Patients	26	23	78	8	7	25		
	Total Patient Years	1890	1824	4842	480	693	194		
	Ave. Age of ATD Onset	79	79	83	72	78	84		

### Biography

William E Feeman Jr is a Physician at Wood County Hospital, and private practice in Bowling Green, Ohio. He is the Founder of Association for the Prevention of Atherothrombotic Disease in Northwest Ohio to facilitate the spread of knowledge about this disease.

bgs43402@yahoo.com