

## Usefulness of the coronary artery calcium (CAC) score for statin prescription in primary prevention: results in over 16.000 assessments

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**Background:** The latest AHA/ACC cholesterol guidelines on primary prevention of coronary artery disease (CAD) recommend the use of the CAC-score to help in decision making for not using or using statins: If the CAC-score is 0, it is reasonable to withhold statin therapy (as long as higher conditions are absent). If CAC-score is 1 - 99, it is reasonable to initiate statin therapy for patients  $\geq 55$  years of age. If the CAC-score is  $\geq 100$ , it is reasonable to initiate statin therapy. Therefore, in the present analysis, we assessed the impact of these guidelines in everyday cardiology practice.

**Methods:** We analysed our data base with 16083 assessments of the CAC-score in persons with no known coronary or other cardiovascular disease and no exercise-dependent chest pain or shortness of breath. The

CAC-score was determined with a multi-slice CT. Using the "step-and-shoot" acquisition protocol, the average dose was around 1 mSv.

**Results:** In the total group, a CAC-score of 0 was found in 35%, a CAC-score of  $>0$  up to  $<100$  in 36% and  $\geq 100$  in 29%. The percentage of the above mentioned 3 CAC-score groups depending on age and gender are listed in table 1.

**Conclusion:** With the support of the CAC-score, a prescription of statins can be avoided in up to appr. 60% of middle-aged male and up to appr. 80% of middle-aged female persons. On the other hand, the use of statin is reasonable in appr. two thirds of higher-aged male and one third of higher-aged female persons for primary prevention.

Table 1. CAC-score depending on age and gender in 16.083 assessments

CAC-score	Age Groups						
	40–44 y	45–49 y	50–54 y	55–59 y	60–64 y	65–69 y	70–75 y
Male Assessments (n=11271)							
0	59%	46%	34%	24%	16%	11%	4%
$>0$ to $<100$	34%	40%	44%	43%	40%	35%	29%
$\geq 100$	7%	14%	22%	33%	44%	54%	67%
Female Assessments (n=4812)							
0	81%	79%	67%	58%	49%	35%	24%
$>0$ to $<100$	17%	17%	25%	33%	35%	42%	40%
$\geq 100$	2%	4%	8%	9%	16%	23%	36%