

# Elderly women with myocardial infarction arrive at the hospital too late

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It takes women aged over 65 the longest to arrive at the emergency department after the onset of myocardial infarction symptoms. As a consequence, valuable time is lost to reopen the occluded blood vessels and limit the damage to the myocardium. This was revealed by a study of the German Centre for Cardiovascular Research (DZHK) in cooperation with the Helmholtz Zentrum München and the Technical University of Munich. The researchers recommend targeted educational strategies for this risk group.

"The difference between elderly [women](#) and all other groups investigated by us, namely younger women aged under 65 as well as men aged over and under 65 is striking," says the DZHK scientist Professor Karl-Heinz Ladwig, group leader at the Institute of Epidemiology of the Helmholtz Zentrum München and Professor of Psychosomatic Medicine at the Technical University of Munich. In the case of elderly women, an average of more than four and a half hours pass before they arrive at an [emergency department](#); younger women, however, take just under two and a half hours. Even younger and older men are quicker: for men aged over 65, it takes over three and a half hours in comparison to just over three hours for younger men until they are examined in hospital. In contrast to previous assumptions, it is thus neither age nor sex alone, but the combination of both age and female sex that contribute to long delay times between the onset of [myocardial infarction](#) symptoms and treatment in an emergency department. And yet in the case of a myocardial infarction every minute counts to examine the heart with a catheter and reopen the occluded blood vessel. This is because the

quicker the blood flow can be restored, the fewer myocardial cells die.

The data come from the MEDEA study (Munich Examination of Delay in Patients Experiencing Acute Myocardial Infarction), in which 619 patients with myocardial infarction for whom an ST-segment elevation was present in the electrocardiogram were interviewed during a period of more than four years. This project was funded by the German Heart Foundation. Certified interviewers met with the patients within 24 hours after they left the intensive care unit. Moreover, the [study participants](#) filled in a questionnaire and their physical risk factors were ascertained from their medical records and the information provided by medical staff. The clinical characteristics of men and women differed only slightly, with male study participants being smokers slightly more often than female participants. When considering the sociodemographic factors, it became apparent that female study participants lived alone more often and were older and more frequently unemployed.

The general assumption that [chest pain](#) as a typical symptom of myocardial infarction is absent only in women could not be verified by Ladwig and his colleagues. This is because the absence of chest pain had only a minor effect on the delay times of elderly female patients and could not explain the observed excessive differences in time. Instead, the data of the MEDEA study show that the absent chest pain is an age-related effect and is not typically female, since the researchers found that this symptom was absent almost as often in elderly men as in elderly women. According to Ladwig, the occurrence of chest pain can be summarised in the simple formula: "The older the patient, the less chest pain."

"We could not determine any differences between the sexes for nausea or vomiting either," says Ladwig. "This was completely different to what we expected, since these atypical conditions were previously always ascribed more to women." Absent or unusual conditions can thus not be

the reason why elderly women go to the emergency department so late.

## Misplaced modesty

Ladwig and his colleagues find the reasons for the long delay times in the psychological area, including in a modesty which in this case is totally misplaced: "It'll get better, so there's really no need for me to phone the doctor on call. What'll the neighbours think if the ambulance arrives and it was nothing after all?" Such thoughts are probably frequent especially for elderly women and lead to the dangerous delays. The scientists are already planning a follow-up study in which they want to research these factors in elderly women in greater detail.

They also recommend a focus on this risk group in myocardial infarction education. "One of our key aims is to target [elderly women](#) in future through nationwide campaigns or physicians," says Ladwig. General practitioners should speak to their elderly female patients who have risk factors for myocardial infarction. They should explain to them how important it is to call the 112 early enough and how they can properly react in an emergency. This also includes easy tips like attaching the note with the emergency number directly onto the telephone and namely writing it large enough so it can be read without glasses.

**More information:** Karl-Heinz Ladwig et al. Comparison of Delay Times Between Symptom Onset of an Acute ST-elevation Myocardial Infarction and Hospital Arrival in Men and Women

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