

# Heart attacks are more serious if they occur at certain times of the day

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People who have a heart attack are likely to be more seriously affected if the attack happens in the morning, reveals research published ahead of print in *Heart* journal.

Heart attacks that occur between 6am and noon are more likely to leave a 20% larger area of dead tissue (infarct) caused by the attack, which is more serious for the person affected, than at any other time of the day.

It is well established that a person's 24 hour body clock influences several cardiovascular physiological processes including the incidence of heart attacks, which tend to happen more around the time when a person is waking up from [sleep](#), but what is less known is the extent of damage that this leads to.

Researchers in Madrid, Spain set out to determine the impact of time of day of a [heart attack](#) on the size of the dead tissue (infarct) caused in patients with an ST segment elevation [myocardial infarction](#) (STEMI) – a type of heart attack caused by a prolonged period of blocked blood supply.

They analysed data on 811 patients with a STEMI heart attack admitted to the coronary care unit of Hospital Clinico San Carlos in Madrid between 2003 and 2009. They calculated the size of infarct by looking at enzyme release in patients.

The time of STEMI onset was divided into four 6-hour time periods in

phase with 24-hour [body clock](#) rhythms.

Patients with the largest infarct size were found to be those who had a heart attack in the dark to light transition period of 6am to noon. These patients were found to have around a 21% higher level of enzymes in this period (which indicated a larger infarct size) than patients who had their heart attack between 6pm and midnight.

The greatest number of patients (269) had their heart attack in the 6am to noon period, followed by 240 patients who had their attack between noon and 6pm, 161 during the 6pm to midnight period, and 141 between midnight and 6am.

They also found that patients with a STEMI that happened in the anterior wall of the heart were left with a larger size of [infarct](#) than patients whose heart attacks happened in other locations.

The authors conclude: "If confirmed, these results may have a significant impact on the interpretation of clinical trials of cardioprotective strategies in STEMI."

Provided by British Medical Journal

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