

# The heart of the matter

Four joggers train using their smart watch to constantly measure and display their heart rate.

After consulting their watch, they are able to determine the type of exercise they are doing.

Here is some information to help them :

- the reserve heart rate (RHR) which is the difference between the maximum heart rate and the rest heart rate ;
- each person has his own RHR ;
- the heart rate increases during an exercise session.



<b><math>E</math> = difference between measured heart rate and rest heart rate.</b>	<b>Type of exercise</b>
$E < 0,6 \times \text{RHR}$	Warm up or warm down
$0,6 \times \text{RHR} \leq E < 0,7 \times \text{RHR}$	Basic endurance
$0,7 \times \text{RHR} \leq E < 0,8 \times \text{RHR}$	Active endurance
$E \geq 0,8 \times \text{RHR}$	Anaerobic activity

<b>Name</b>	<b>Rest heart rate</b>	<b>Maximum heart rate</b>	<b>RHR</b>	<b>Measured heart rate</b>
Marc	60	180	120	108
Luc	65	175		155
Matthieu	70	170		135
Jean	80	162		142

Marc's exercise is of the " warm up or wind down " type.

***Find the type of exercise that Luc, Matthieu and Jean have done. Justify your answers.***