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Characterization of the exertional heat stroke cases in the French Army: analysis of patients profile and of the type of exercise

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Introduction & objective

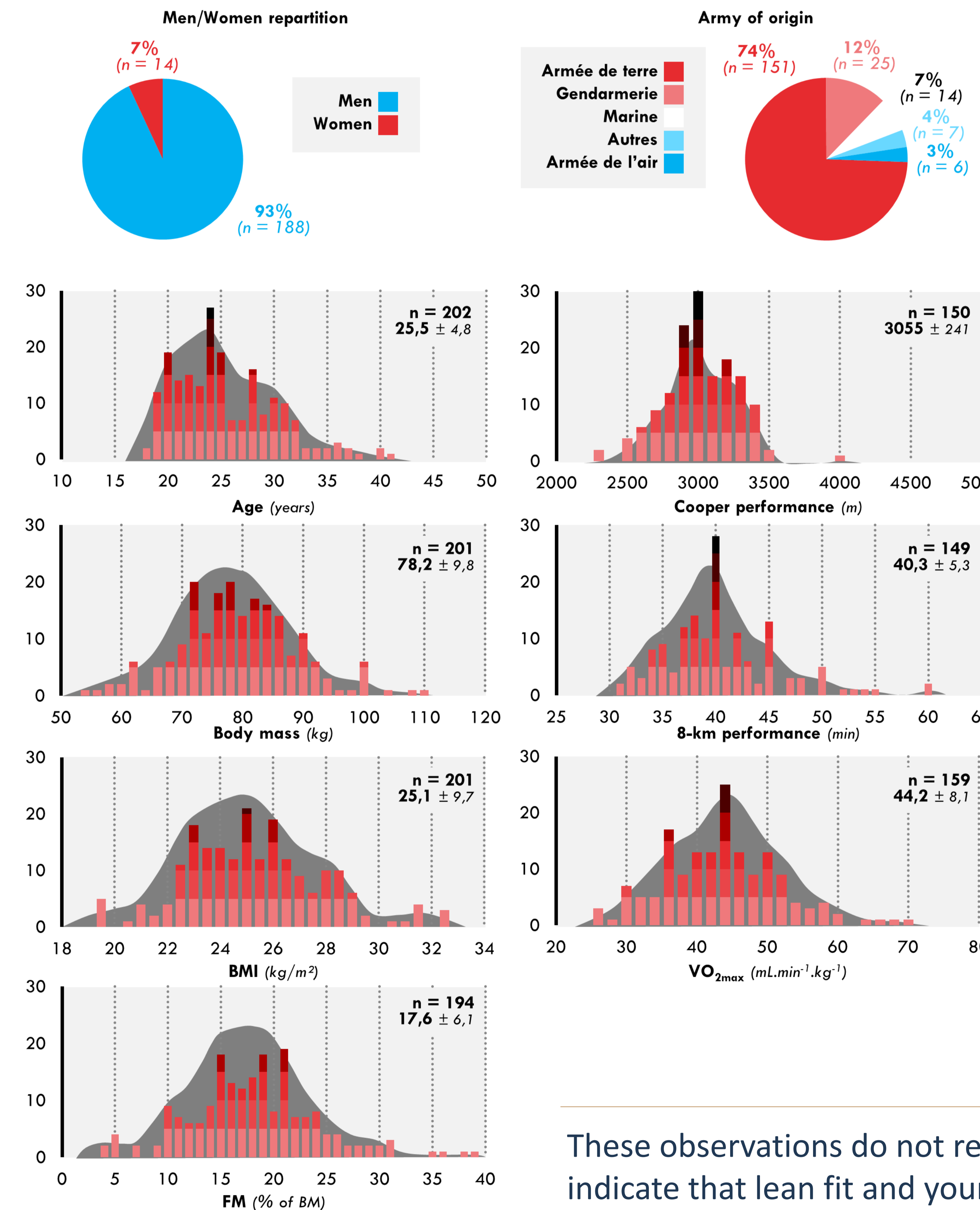
Exertional heat stroke (EHS) is an association of hyperthermia (>39°C) and central nervous system disturbances occurring during a strenuous physical exercise affecting therefore athletes and military personnel. The identification of risk factors is a complex task since multiple extrinsic and intrinsic factors may be involved. EHS is a main hazard in the French army (27 per 100000 person years) and identification of specific risk factors appear very important to limit EHS occurrences.

Materials & methods

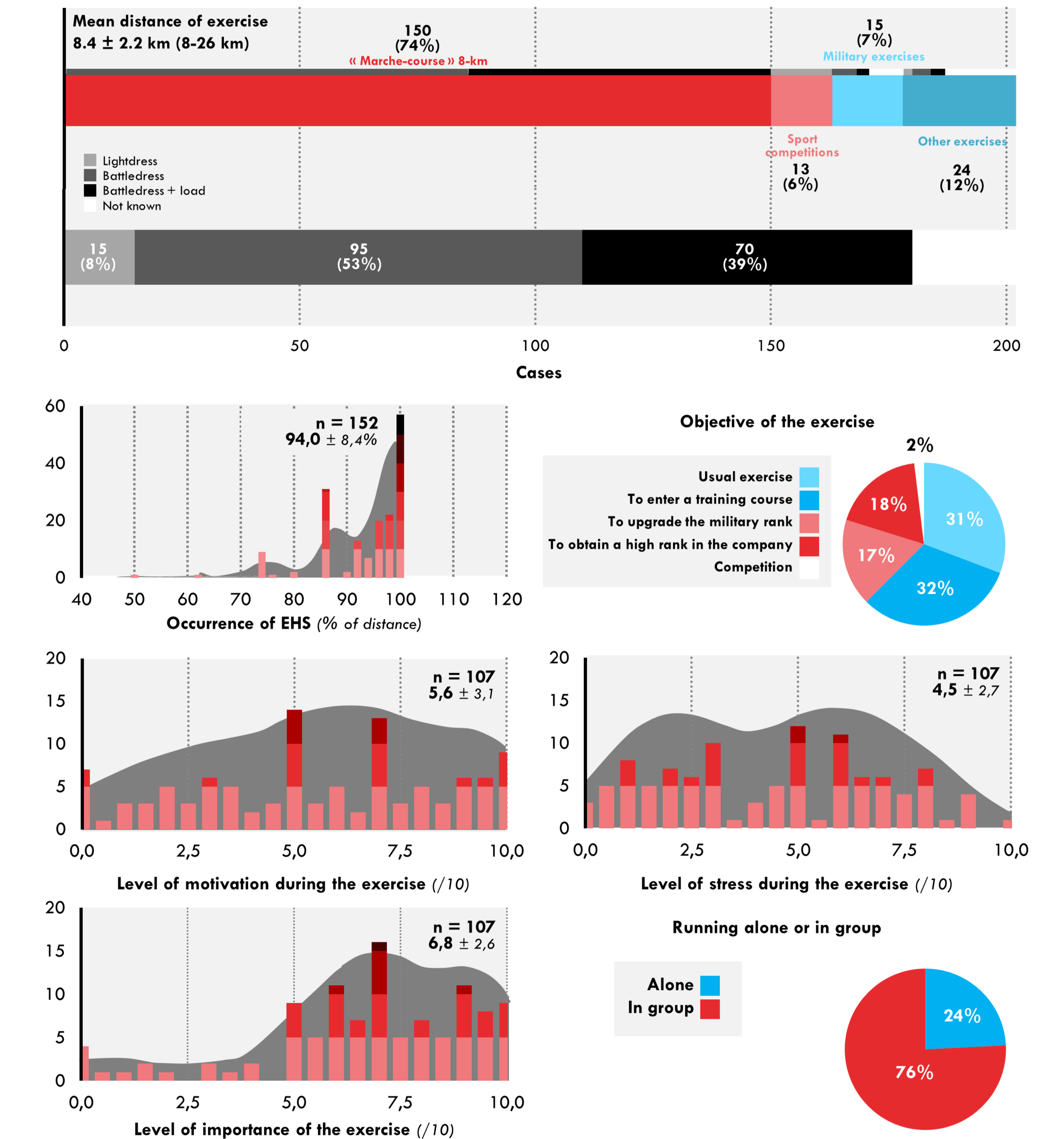
We conducted a retrospective study among military personals after an EHS between 2013 and 2021 (n = 203). After an individual interview, body composition (bioelectrical impedance scale) and maximal oxygen uptake (VO_{2max} on ergocycle) were measured. Then a subgroup (n = 107) filled a questionnaire assessing the perception of the exercise during which EHS occurred (10-cm visual analog scales).

Results & discussion

PATIENTS PROFILE



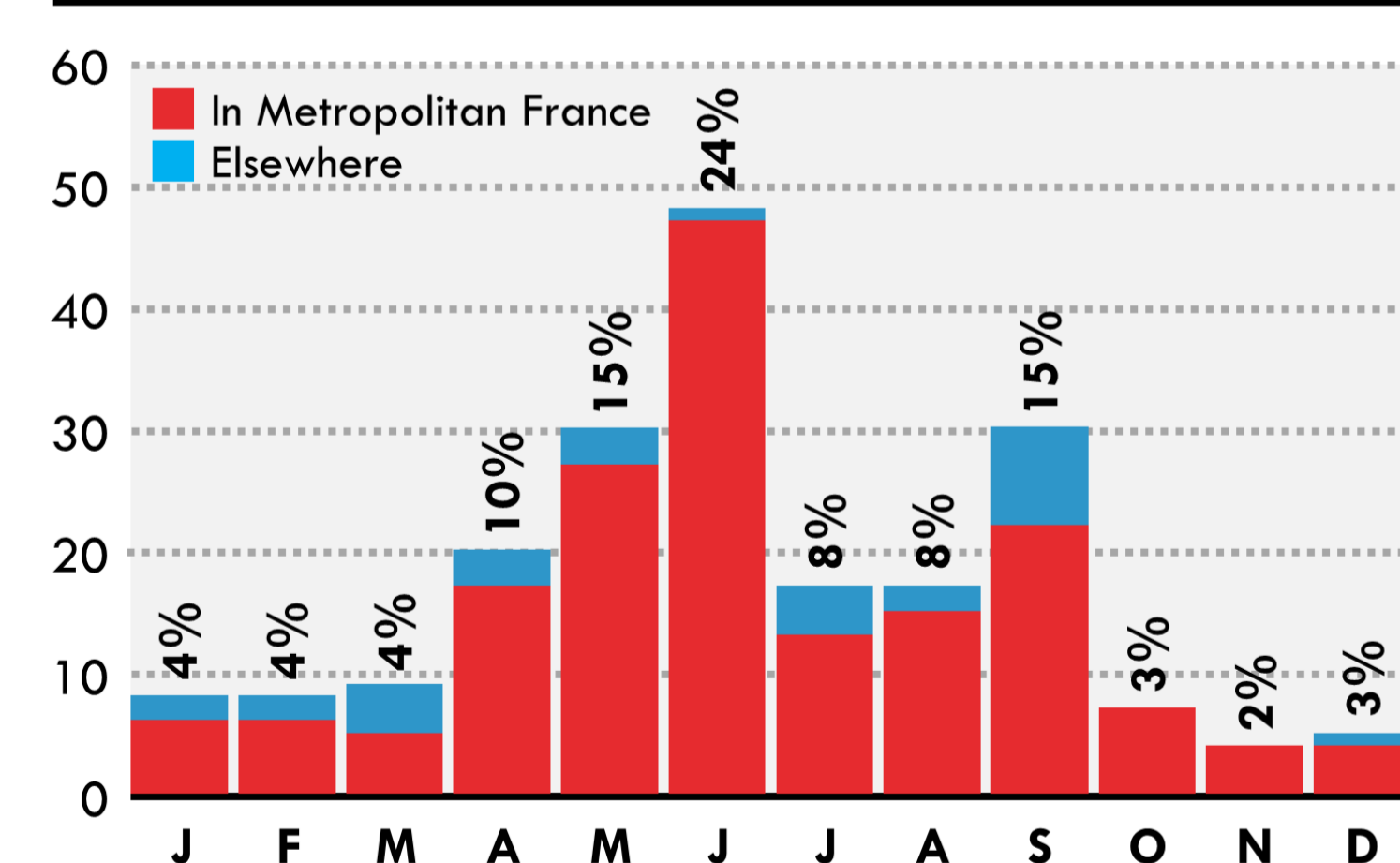
DESCRIPTION OF THE PHYSICAL EXERCISE INDUCING A EHS



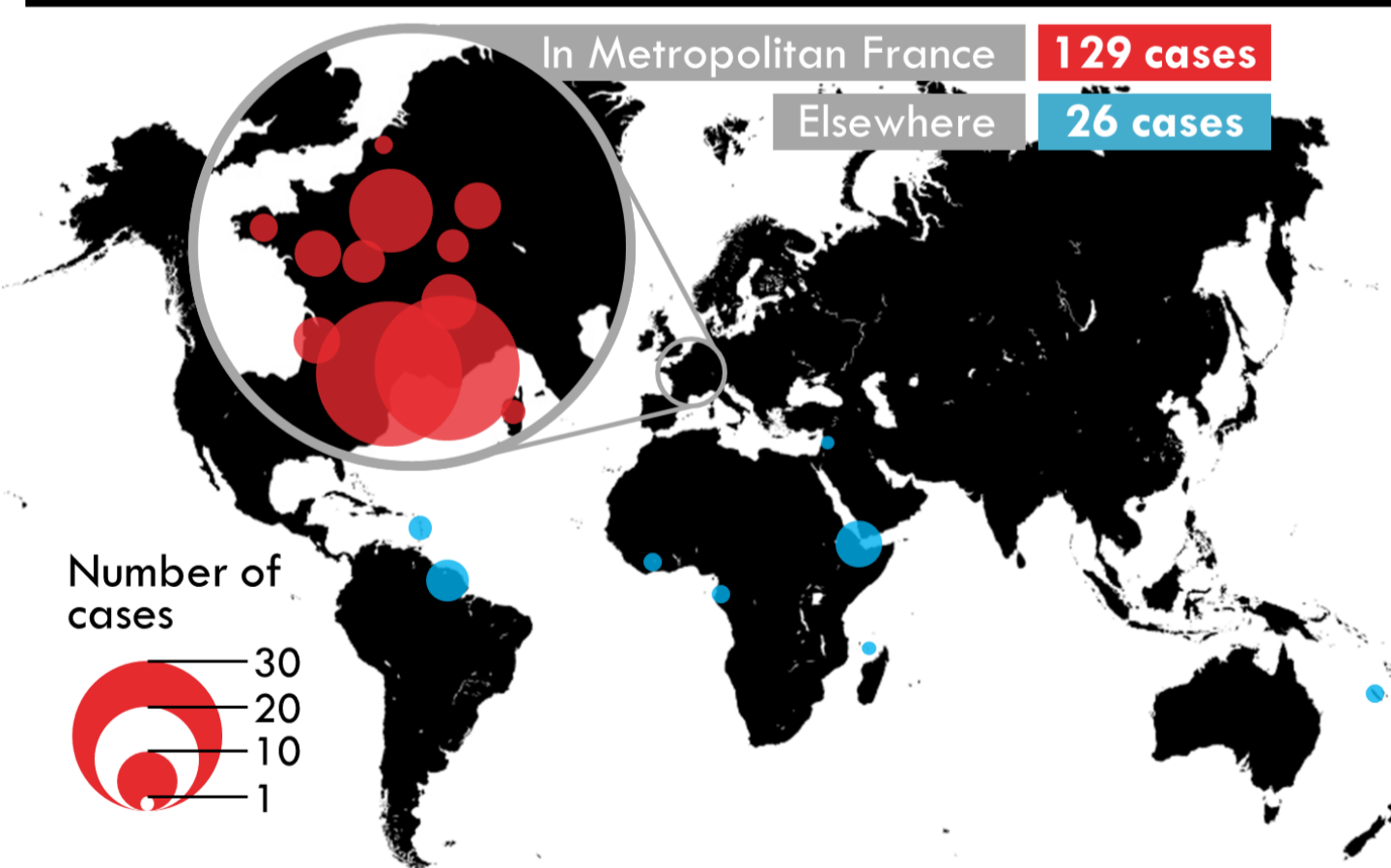
Conclusion

These observations do not reveal a specific profile of personnel at risk to suffer from EHS. However they indicate that lean fit and young soldiers seems not specifically protected against EHS. However EHS seems to occur mostly during 8-km event with battledress, between June and September and high levels of objective and perceived importance strongly suggesting that this kind of exercises should be avoided as possible during these months or that medical support should be reinforced when these conditions are gathered.

ANNUAL REPARTITION OF EHS CASES



GEOGRAPHICAL REPARTITION OF EHS CASES



THERMAL ENVIRONMENT DURING EHS

