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## Data in Brief

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## Data Article

## Data for occupancy internal heat gain calculation in main building categories

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## ABSTRACT

Heat losses from occupant body by means of convection, radiation, vapor, and sweat are essential data for indoor climate and energy simulations. Heat losses depend on the metabolic activity and body surface area. Higher variations of body surface area of occupants are observed in day care centers, kinder gardens and schools compared to other building categories (Tables 2 and 3) and these variations need to be accounted, otherwise in these building categories heat gains, CO<sub>2</sub> and humidity generation are overestimated. Indoor temperature, humidity level, air velocity, and clothing insulation have significant influences on dry and total heat losses from occupant body leading to typical values for summer and winter. The data presented in this article are related to the research article entitled Occupancy schedules for energy simulation in new prEN16798-1 and ISO/FDIS 17772-1 standards (Ahmed et al., 2017) [1].

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## Specification Table

Subject area	Construction & Building technology
More specific subject area	Energy and indoor climate

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E-mail address: [kaiser.ahmed@aalto.fi](mailto:kaiser.ahmed@aalto.fi) (K. Ahmed).<https://doi.org/10.1016/j.dib.2017.10.036>2352-3409/© 2017 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Type of data	Calculated
How data was acquired	Calculated with Equations provided in the research article for main building categories
Data format	Table
Experimental factors	
Experimental features	
Data source location	Research article [1]
Related research article	Occupancy schedules for energy simulation in New prEN16798-1 and ISO/FDIS 17772-1 standards [1].

### Value of the data

- The data provided in this paper may be used as occupancy related input data for indoor climate and energy simulations in main building categories.
- The data presented the effects of variation of body surface area of occupants in day care center, kinder garden, and school. These differences are to be accounted; otherwise the heat gains are overestimated.
- The data might support the researchers to get information about the heat losses from occupant by means of convection, radiation, vapor and sweat as well as humidity and CO<sub>2</sub> generation.
- The data provided the information about typical dry and total heat loss values from occupancy in main building categories during summer and winter.

## 1. Data

The data presented in this article are related to the research article entitled Occupancy schedules for energy simulation in new prEN16798-1 and ISO/FDIS 17772-1 standards [1]. The data allow to calculate the dry and total heat losses from occupant body in different building categories during summer and winter. Six parameters affect for estimating the heat losses from occupant body, namely metabolic rate, air temperature, radiant temperature, air velocity, humidity, and clothing insulation.

Activity level (Table 1) and body surface area (Table 2) is the starting point of heat losses calculation of occupant body. Activity level is presented in the form of metabolic rate and depends on the

**Table 1**  
Metabolic rates of main building categories [2–5].

Institution			Metabolic rate (met)
Day care center	Children	2–4 yr	1.0
	Professional	Adult people	1.91
Kinder garden	Children	5–6 yr	1.39
School	Grade 1–6	7–12 yr	1.2
	Grade 7–12	13–18 yr	1.2
	Teacher	Adult people	1.46–1.72
Department store		Adult worker	1.6
Office, Meeting room		Adult office worker (Sedentary)	1.2
Detached house, Apartment building		Adult people	1.2
Hotel, Restaurant, Hospital		Adult people (Sedentary)	1.2
Sport, terminal, theatre		Adult people	1.6

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