# What drives patients?

## A cross-sectional survey of the effects and fear of hypoglycaemia on individuals, workplace, and patients' continued eligibility to drive

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### AIM

The aim of the study was to investigate the effect and fear of hypoglycaemia on the individual,workplace, and patients' continued eligibility to drive.

### METHOD

CAWI (Computer Assisted Web Interviewing) among members of the Danish Diabetes Association with a diagnosis of type 1 or type 2 diabetes aged ≥ 18 years.
The survey was conducted from September to October 2012.
All analyses were performed using Statistical Analysis Software (SAS) version 9.1.

### RESULTS

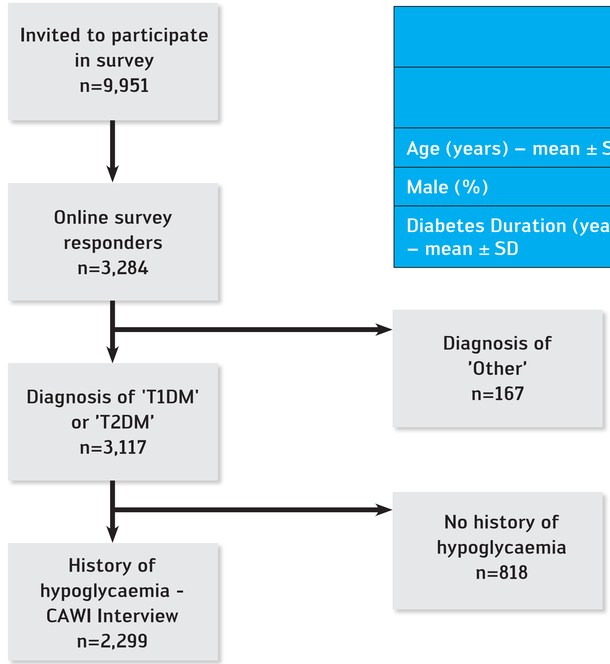
Frequency of hypoglycaemia

| | Total (3117) | T1DM (1005) | T2DM (2112) | |
|---|---|---|---|---|
| | | | Insulin (556) | Non-Insulin (1556) |
| **Mild hypoglycaemia** (Events per patient per week) Proportion of patients | 0.8 ± 1.8* 67.1% | 1.9 ± 2.4 98.5% | 0.4 ± 1.3 78.4% | 0.2 ± 0.9 42.7% |
| **Severe Hypoglycaemia** (Events per patient per year) Proportion of patients | 1.2 ± 10.7 20.7% | 2.9 ± 17.9 49.8% | 0.6 ± 4.2 16.4% | 0.1 ± 1.6 3.5% |
| **Nocturnal Mild Hypoglycaemia** (Events per patient per week) Proportion of patients | 0.2 ± 0.8 46.5% | 0.4 ± 1.0 89.8% | 0.1 ± 0.6 45.4% | 0.1 ± 0.5 15.4% |
| **Nocturnal Severe Hypoglycaemia** (Events per patient per year) Proportion of patients | 0.3 ± 3.4 12.0% | 1.0 ± 5.8 31.3% | 0.1 ± 0.7 4.8% | 0.1 ± 1.4 0.5% |

*Standard deviation (SD)

### HYPOGLYCAEMIA AND DRIVING

In the total cohort, 23% of patients with a private driver license and 16% of patients with a HGV/commercial license would consider under-reporting of hypoglycaemia in order to retain their respective driver license.




| | Total (3117) | T1DM (1005) | T2DM (2112) | |
|---|---|---|---|---|
| | | | Insulin (556) | Non-Insulin (1556) |
| **Age (years) – mean ± SD** | 57 ± 14 | 45 ± 14 | 63 ± 10 | 62 ± 9 |
| **Male (%)** | 51.3% | 43.4% | 59.7% | 53.3% |
| **Diabetes Duration (years) – mean ± SD** | 13 ± 11 | 21 ± 13 | 13 ± 8 | 7 ± 6 |

**MILD HYPOGLYCAEMIA:**
low blood glucose event requiring self-treatment

**SEVERE HYPOGLYCAEMIA:**
low blood glucose event requiring 3rd party assistance or resulting in loss of consciousness

**Danish Diabetes Association**

80.000 members:

| | |
|---|---|
| Type 1 | 21% |
| Type 2 | 50% |
| Other | 29% |

### FEAR OF HYPOGLYCAEMIA

In patients having experienced at least one episode of mild hypoglycaemia, 43% expressed fear of future episodes of mild hypoglycaemia. This compared with 74% of patients having experienced at least one episode of severe hypoglycaemia expressing fear of future episodes of severe hypoglycaemia.
Fear of future hypoglycaemia events was not associated with the type of diabetes or treatment with insulin.
The highest proportion of patients expressing fear in a given situation was in relation to both mild (34.1%) and severe (66.6%) nocturnal hypoglycaemia.

### HYPOGLYCAEMIA CONSEQUENCES FOR THE INDIVIDUAL

Self-care strategies to avoid hypoglycaemia include maintaining higher blood glucose levels during the day or night (45.7%) and reducing physical activity (15.7%)

### HYPOGLYCAEMIA AND THE WORKPLACE

Most patients who had experienced at least one episode of mild or severe hypoglycaemia had informed work colleagues (93,6%), but fewer felt secure that their colleagues would be able to assist them during a hypoglycaemic episode (76,1%).
Few people take sick leave as a result of hypoglycaemia, but prolonged (≥4 hours) mental recovery following an episode of mild or severe hypoglycaemia was reported by 8.7% and 31.0%, respectively.

## CONCLUSION

- **Fear of hypoglycaemia are associated to previous experience of hypoglycaemia and its severity rather than the type of diabetes or treatment**
- **Inappropriate self-care behaviours to avoid hypoglycaemia may negatively impact long-term treatment goals**
- **Few people take sick leave as a result of hypoglycaemia, but prolonged mental recovery of 4 hours or more may affect work productivity**
- **Compromising doctors' roles as caregivers may ultimately lead to increased risk of hypoglycaemia, as patients may under-report severe hypoglycaemia thus preventing doctors from optimising diabetes therapy to avert hypoglycaemia**

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