Correlates of accelerometer-assessed physical activity and sedentary time among adults with type 2 diabetes

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ABSTRACT

OBJECTIVES: The aims of this study were to describe the volume and patterns of objectively assessed sedentary behaviour, light intensity physical activity (LPA) and moderate-vigorous physical activity (MVPA), and to examine socio-demographic correlates, among adults living with type 2 diabetes.

METHODS: Participants ($n = 166$) wore an accelerometer (Actigraph® GT3X+) for seven consecutive days during waking hours and completed a questionnaire. Physical activity (PA) and sedentary time were described, and multivariable linear regression was used to estimate associations between socio-demographic characteristics and sedentary time and PA.

RESULTS: Participants, 46% of whom were female, had a mean age of 65.4 years (standard deviation (SD) = 9.5), body mass index (BMI) of 31.5 (6.6) kg/m² and had been living with diabetes for an average of 13.1 (7.6) years. Participants were sedentary for 543.6 minutes/day, spent 273.4 minutes/day and 22.4 minutes/day in LPA and MVPA respectively. BMI was associated with increased sedentary time and reduced LPA (−2.5 minutes/day, 95% CI: −4.33 to −0.70) and MVPA (−0.62 minutes/day, 95% CI: −1.05 to −0.18) time. Compared with males, females had more LPA (34.4 minutes/day, 95% CI: 10.21–58.49) and less MVPA (−6.2 minutes/day, 95% CI: −12.04 to −0.41) time. Unemployed participants had 30.05 minutes more MVPA (95% CI: 3.35–56.75) than those who were employed or homemakers, and those not reporting income had 13 minutes/day more MVPA time than participants in the lowest income category (95% CI: 3.46–22.40).

CONCLUSION: Adults living with type 2 diabetes were not sufficiently active and were highly sedentary. Our results emphasize the need for more research exploring the diabetes-related health outcomes of sedentary behaviour and physical inactivity among people living with type 2 diabetes.

KEY WORDS: Accelerometer; sedentary behaviour; physical activity; diabetes mellitus; type 2

La traduction du résumé se trouve à la fin de l'article.

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People living with type 2 diabetes are at increased risk for complications associated with considerable morbidity and mortality.¹ Even after accounting for smoking, hypertension and dyslipidemia, people living with type 2 diabetes have 2–4 times greater risk for CVD than those not living with type 2 diabetes.² The main goal of diabetes self-management is to prevent or delay complications associated with diabetes.³ Lifestyle interventions, mainly physical activity and diet, may influence the progression of type 2 diabetes, the onset of complications, and glycemic control.⁴ Participating in regular daily moderate-vigorous physical activity (MVPA) is beneficial for people living with type 2 diabetes, and is a recommended strategy for glycemic control.⁵

Sedentary behaviour has emerged as an important risk factor to consider when examining the daily activities individuals with type 2 diabetes engage in.^{6,7} Sedentary behaviours are defined as low energy expenditure (≤ 1.5 metabolic equivalent; MET) with an accompanying sitting or recumbent posture.⁸ To counteract the negative physiologic consequences of being overly sedentary, interrupting sitting with bouts of low impact physical activity has been shown to have positive effects on the blood levels of glucose, insulin and triglycerides in adults with type 2 diabetes.⁶ Not only low physical activity but also prolonged time in sedentary behaviour (referred to as sedentary time in this article) may

increase the risk for complications in diabetes.⁹ The detrimental effects of long periods of sedentary time appear to persist even after accounting for other forms of physical activity.¹⁰

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Despite strong evidence and recommendations for achieving 150 minutes/week of MVPA, many living with type 2 diabetes do not engage in sufficient physical activity^{11–13} and spend much of their time sedentary.⁹ Much of this evidence around physical activity and sedentary behaviour has been gathered via self-report questionnaires.¹⁴ Self-reported physical activity and sedentary behaviour often demonstrate poor agreement with objective measures (such as accelerometers) of these behaviours in other populations.¹⁵ Objective estimates of physical activity using accelerometers allows for detailed measurement of the frequency, intensity and duration of daily activities while also determining the amount and pattern of accumulated daily sedentary time.

To date, the vast majority of studies have assessed physical activity and sedentary behaviours in persons living with type 2 diabetes using self-report, primarily, and few studies have used objective measures such as accelerometry.^{16,17} Identifying correlates of objectively assessed physical activity and sedentary behaviour in people living with diabetes may enable us to identify certain groups of individuals with type 2 diabetes who may be more or less likely to engage in these behaviours. The aims of this study were to 1) describe the volume and patterns of daily sedentary time, as well as daily LPA and MVPA and 2) examine the socio-demographic and behavioural correlates of daily time spent sedentary, in LPA and in MVPA among adults with type 2 diabetes.

METHODS

Study design and participants

This study was conducted as a substudy of the Alberta's Caring For Diabetes (ABCD) prospective cohort study, initiated in 2012 and designed to assess factors affecting health outcomes in people living with type 2 diabetes in Alberta, Canada.¹⁸ Briefly, adults with type 2 diabetes ($N = 2040$) were recruited through primary care networks, diabetes clinics, and advertisements. Participants completed a self-administered survey that included questionnaires relating to health status and health-related behaviours. This substudy was designed to capture lifestyle-related behaviours in a geographically representative sample from within the ABCD cohort. All ABCD cohort participants completing year-three (2015) assessments ($N = 1942$) received an invitation to participate. Overall, 1315 (68%) responded to the survey invitation, 781 declined and 534 accepted. (Supplementary Table 1 – see the ARTICLE TOOLS section on the journal website – shows characteristics of these groups. The data in this table are taken from the pre-existing information from the cohort survey.) Of the 534 who accepted the invitation, a sample of 248 was drawn, using quota-sampling to reflect distribution across 5 provincial health zones. The 248 participants were mailed a study package, which included an accelerometer and a logbook. This study was approved by the Health Research Ethics Board of the University of Alberta (Study number: Pro00044665) and all participants gave written informed consent.

Socio-demographic measures

Socio-demographic characteristics, including age, sex, education, marital status, employment status, ethnicity, and smoking status, were determined by questionnaire. Anthropometric measurements,

including weight and height, were self-reported, with body mass index (BMI) calculated as kg/m^2 .

Physical activity and sedentary time

Physical activity and sedentary time were measured using an accelerometer (ActiGraph® GT3X+ (Pensacola, Florida)) worn on the dominant hip for seven consecutive days. Participants were instructed to wear the device at all times during waking hours, except when coming in contact with water (e.g., bathing, swimming). A logbook was provided for participants to record periods of non-wear time during the day. The accelerometer data were processed using 60-second epochs. Sedentary time (<100 counts-per-minute (CPM)), LPA ($100\text{--}1951$ CPM) and MVPA (≥ 1952 CPM) cut-offs were used to distinguish between the different types of activity.^{19,20} Non-wear time was defined as intervals of at least 60 consecutive minutes of zero counts, with allowance for up to two minutes of observations of less than 50 counts per minute within the non-wear interval. At least 600 minutes of wear time and no excessive counts ($>20\,000$ counts per minute) were required for a day of collection to be considered valid; 20 days of measurement that did not meet these criteria were excluded.

Mean daily time spent in bouts (prolonged periods) of sedentary time and MVPA were also derived from the accelerometer data. For sedentary time, we derived time spent in bouts of 20 or more consecutive minutes, which have been shown to have a negative effect on cardio-metabolic biomarkers.²¹ For MVPA, we derived time spent in bouts of 10 or more consecutive minutes (with allowance for interruption) following recommendations made in the Physical Activity Guidelines Advisory Committee report produced for the US Department of Health and Human Services in 2008.²²

Statistical analysis

Descriptive statistics were used to characterize socio-demographic information, sedentary time and physical activity. Missing data were minimal (i.e., $<10\%$) for all variables. Mean imputation was used, whereby missing values for a certain variable are replaced by the mean. This method was chosen for its simplicity and to maintain sample size. Participants were also classified as meeting or not meeting recommendations for MVPA according to guidelines;²³ those meeting the guidelines participated in a minimum of 150 weekly minutes of MVPA which was performed in bouts of no less than 10 minutes. Weekly minutes were calculated by multiplying the average daily amount by seven.

For daily minutes spent in each of sedentary, LPA and MVPA time, linear regression models were fitted to test associations of each of these behaviours with individual socio-demographic variables (age, sex, education, marital status, employment status, ethnicity, smoking status, BMI, and diabetes duration). Any variable with a p -value less than 0.2 in these initial univariate analyses was then included in the final multivariate model, which was adjusted for wear time.²⁴ Variables in the multivariate model with a p -value of less than 0.05 were considered significant. All statistical analyses were performed using Stata SE 10.1, StatCorp, College Station, Texas, USA.

RESULTS

Of the 248 participants who received the initial study package, 166 (67%) participants completed all the study requirements (i.e.,

logbook, accelerometry and questionnaire) and were included in this analysis. Eighty-two participants (non-respondents) who received the study package either did not complete it or the package was lost. There were no significant differences in age, sex distribution, income, marital status education, employment, diabetes duration, BMI and PA between respondents ($n = 166$) and non-respondents ($n = 82$). Respondent characteristics included a mean age 65.4 (SD = 9.5) years, 46% female, 88% married, 54% college education or higher, 39% employed. Respondents had been living with diabetes for an average of 13.1 (SD = 7.6) years and had a mean BMI of 31.5 (SD = 6.6) kg/m² (Table 1).

Table 1. Participant characteristics ($N = 166$)

Characteristic	N or mean (%) or $\pm$ SD
Age (years)	65.4 $\pm$ 9.5
Age at diabetes diagnosis (years)	52.3 $\pm$ 10.1
Diabetes duration (years)	13.1 $\pm$ 7.6
Sex	
Male	92 (54)
Female	74 (46.0)
Married or common law	144 (87.8)
Education	
High school and less	77 (46.4)
College and higher	89 (53.6)
Employed	
Employed (part-, full-time, or self-employed)	65 (39.2)
Unemployed	2 (1.2)
Other (retired, homemaker, and other)	99 (59.6)
Ethnicity	
Caucasian	151 (91.0)
Non-Caucasian	15 (9.0)
Annual household income (Canadian dollars)	
<\$40,000	33 (19.9)
\$40,000–\$80,000	51 (30.7)
>\$80,000	51 (30.7)
No answer	31 (18.7)
Smoking status	
Non-smoker	68 (41.2)
Current (including occasional) smoker	7 (4.2)
Ex smoker	87 (52.7)
Body mass index (kg/m ²)	31.5 $\pm$ 6.6

On average, participants wore the accelerometer for 6.8 (SD = 1.3) days, for an average of 840 minutes (14 hours) per day (Table 2). They spent an average of 543.6 minutes (9.1 hours) per day sedentary, 273.4 minutes (4.6 hours) per day in LPA, 22.2 minutes per day in moderate intensity activity and 0.2 minutes per day in vigorous activity (i.e., 22.4 minutes per day in MVPA). This equates to the participants spending an average of 64.7% of their accelerometer wear-time sedentary, 32.5% in LPA and 2.7% in MVPA. Only 10% of this sample met recommendations of 150 minutes per week of MVPA in 10-minute bouts.²³

Univariate analysis

Age, sex, employment status, smoking and BMI were associated with sedentary time in univariate analysis. Age, sex, marital status, income, smoking, BMI, and diabetes duration were associated with LPA time. Age, sex, marital status, employment, income and BMI were associated with MVPA time. All significant variables with a $p < 0.2$ were entered into the final multivariate models (Table 3).²⁴

Multivariate analysis

BMI was significantly associated with sedentary time in the final model; increasing BMI was associated with sedentary time (3.38 minutes/day, 95% CI: 1.52–5.23). Sex was significantly associated with LPA time in the final model; females had significantly higher LPA time than males (34.4 minutes/day, 95% CI: 10.21–58.49). Increased BMI was associated with less LPA time (–2.5 minutes/day, 95% CI: –4.33 to 0.70). Females had significantly less MVPA time than males (–6.23 minutes/day, 95% CI: –12.04 to –0.41). Unemployed participants had 30.04 minutes/day more MVPA (95% CI: 3.35–56.75) than those who were employed. Those who preferred not to report their income had 13 minutes/day more MVPA time than participants in the lowest income category (95% CI: 3.46–22.40) and as BMI increased, MVPA decreased (–0.62, 95% CI: –1.05 to –0.18) (Table 4).

DISCUSSION

This study adds to and confirms existing findings in the literature where objectively measured physical activity and sedentary behaviour are described together for people living with type 2

Table 2. Physical activity and sedentary time

Physical activity (mean (SD))	All ($n = 166$)	Male	Female
Accelerometer wear time (number of valid days)	6.8 (1.3)	6.8 (1.2)	6.8 (1.4)
Average daily wear time (minutes)	839.40 (81.4)	849.42 (8.6)	828.91 (9.7)
Sedentary time			
Total sedentary time (minutes/day)	543.6 (87.8)	558.4 (87.4)*	525.8 (9.7)
Sedentary time (20-minute bouts/day)	250 (99)	274 (98)*	220 (90)
Number of sedentary bouts/day	6.9	7.6 (2.3)*	6.2 (2.2)
Active time			
Light intensity activity (minutes/day)	273.4 (89.3)	265.1 (85.6)	284.8 (93.6)
Moderate intensity activity (minutes/day)	22.2 (19.4)	25.5 (22.6)*	18.2 (14.4)
Vigorous intensity activity (minutes/day)	0.2 (0.71)	0.3 (0.9)*	0.1 (0.2)
MVPA (minutes/day)	22.4 (19.5)	25.8 (22.8)*	18.3 (14.4)
Total moderate or vigorous (10-minute bouts/day)	9.2 (13.8)	10.3 (15.2)	7.8 (11.8)
Met guidelines for MVPA, n (%)	17 (10.2)	9 (10.3)	7 (9.5)

Note: MVPA = moderate-vigorous physical activity.

* $p < 0.05$. Men had significantly higher values compared with women.

Table 3. Correlates of daily sedentary time, light intensity physical activity and MVPA of participants living with type 2 diabetes (univariate analysis) ($n = 166$)

Characteristic	Sedentary time [†]	LPA time [†]	MVPA time [†]
	β (95% CI)	β (95% CI)	β (95% CI)
Age (years)	0.99 (−0.42, 2.39)*	−2.57 (−3.96, −1.19)*	−0.45 (−0.75, −0.14)*
Sex			
Male	Reference	Reference	Reference
Female	−32.60 (−59.12, −6.08)*	21.36 (−6.31, 49.03)*	−7.68 (−13.68, −1.67)*
Married (%)			
Married or common law	Reference	Reference	Reference
Not married	14.77 (−25.63, 55.18)	−57.70 (−98.10, −17.31)*	−6.98 (−15.93, 1.98)*
Education			
High school and less	Reference	Reference	Reference
College and higher	−2.15 (−29.04, 24.74)	2.54 (−24.95, 30.02)	2.84 (−3.14, 8.82)
Employed (%)			
Employed (part-time, full-time or self-employed)	Reference	Reference	Reference
Unemployed	−93.12 (−216.62, 30.38)*	−4.49 (−125.23, 116.25)	12.85 (−14.31, 40.01)
Other (retired, homemaker, and other)	12.99 (−14.36, 40.33)	−58.82 (−85.55, −32.09)*	−7.77 (−13.78, −1.76)*
Ethnicity			
Caucasian	Reference	Reference	Reference
Non-Caucasian	−3.31 (−51.72, 45.10)	−14.16 (−63.59, 35.28)	−1.42 (−12.21, 9.37)
Income (Canadian dollars)			
<\$40,000	Reference	Reference	Reference
\$40,000–\$80,000	13.16 (−25.37, 51.70)	15.80 (−23.11, 54.72)	8.37 (0.12, 16.63)*
>\$80,000	−0.66 (−39.05, 37.72)	37.15 (−1.62, 75.92)*	14.39 (6.16, 22.61)*
No answer	4.13 (−39.47, 41.73)	2.21 (−41.82, 46.24)	14.40 (5.06, 23.74)*
Smoking status			
Non-smoker	Reference	Reference	Reference
Current (including occasional) smoker	−65.28 (−133.13, 2.57)*	81.52 (12.94, 150.10)*	−0.81 (−16.16, 14.53)
Ex smoker	11.63 (−15.65, 38.90)	−18.58 (−46.15, 8.99)	−2.36 (−8.52, 3.81)
Body mass index (kg/m ²)	3.09 (1.09, 5.09)*	−2.19 (−4.26, −0.12)*	−0.52 (0.97, −0.07)*
Diabetes duration (years)	0.02 (−1.75, 179)	−1.89 (−3.67, −0.10)*	0.10 (−0.30, 0.50)

* Significant association ($p < 0.2$).[†] Activities were processed using 60-second epochs. Sedentary time [<100 counts-per-minute (CPM)], LPA (100–1951 CPM) and MVPA (≥ 1952 CPM) cut-offs were used to differentiate between the different types of activity.^{26,27}

diabetes. The most significant finding of this research is that participants spent two thirds of their day sedentary, one third in LPA and very little time in MVPA ($<3\%$). Additionally, the majority of participants did not meet the 150 minutes in 10-minute bouts of MVPA per/week that are recommended by the CDA.²³

The current study found that the majority of adults with type 2 diabetes are physically inactive. Among our sample, 90% did not meet physical activity guidelines. This figure is higher than previous Canadian data from Plotnikoff et al. (2006),¹³ who reported that among a sample of 1614 adults with type 2 diabetes, 72% were not achieving 150 minutes/week of MVPA based on data collected using a self-reported tool (Godin Leisure-Time Exercise Questionnaire-GLTQ).²⁵ The disparate results are not surprising given the GLTQ has been shown to have low-to-moderate agreement with objective measures of PA (e.g., CALTRAC accelerometer).²⁶ Nevertheless, accumulating evidence demonstrates that Canadian adults with type 2 diabetes most certainly require more support to achieve a sufficient weekly volume of MVPA to derive health benefits.

Although previous research has shown that BMI, sex, age, education and income are associated with physical activity in adults with type 2 diabetes, the evidence has been inconsistent.²⁷ For instance, some studies have reported that older age and female sex are negatively associated with physical activity,¹² while other studies suggest that age and sex²⁸ are unrelated to physical

activity in adults living with diabetes. In terms of educational level, Hays et al.²⁹ observed that those without a high school education were less likely to be physically active. Alternatively, Nelson et al.¹² did not observe any relationship between education and PA. In terms of income, a negative association between income and PA was outlined by Nelson et al.¹² but Hays et al.²⁹ found no association between income and physical activity. Canadian data from Plotnikoff et al. (2006) found younger age, being male, higher education, higher income, and lower BMI to be positively associated with MVPA among adults with type 2 diabetes.¹³ Our results add to the discussion showing that female sex and increasing BMI are negatively associated with MVPA. We found a negative association between not reporting income and PA. Uniquely, we also found that those who were unemployed were more active relative to those who reported being employed.

The participants in this study spent two thirds (~ 9) of their waking hours in sedentary pursuits, 46% of which was accumulated in bouts that lasted at least 20 minutes. These results are in agreement with recent work from Falconer et al.,⁷ who examined sedentary time measured via a waist-worn Actigraph® GT1M among 519 adults with type 2 diabetes: 65% of their time was spent sedentary, of which 45% was accumulated in prolonged 30-minute bouts. Our results are also consistent with those from Healy and colleagues,¹⁷ who found that among a

Table 4. Correlates of daily sedentary time, light intensity physical activity and MVPA of participants living with type 2 diabetes (multivariate analysis)

Characteristic	Sedentary time	LPA time	MVPA time
	β (95% CI) [†]	β (95% CI) [†]	β (95% CI) [†]
Age	0.65 (−1.03, 2.33)	0.07 (−1.66, 1.79)	−0.32 (−0.71, −0.07)
Sex			
Male	Reference	Reference	Reference
Female	−22.57 (−46.70, 2.56)	34.35 (10.21, 58.49)*	−6.23 (−12.04, −0.42)*
Married (%)			
Married or common law (<i>n</i> = 132)	–	Reference	Reference
Not married (<i>n</i> = 34)	–	−31.35 (−70.16, 7.45)	2.08 (−7.56, 11.72)
Education			
High school and less (<i>n</i> = 77)	Reference	–	–
College and higher (<i>n</i> = 89)	−8.79 (−34.03, 16.45)	–	–
Employed			
Employed (part-time, full-time or self-employed)	Reference	Reference	Reference
Unemployed	−83.63 (−193.28, 26.03)	61.49 (−46.50, 169.48)	30.05 (3.35, 56.75)*
Other (retired, homemaker, and other)	27.87 (−4.20, 59.93)	−25.99 (−57.05, 5.09)	−0.48 (−8.19, 7.24)
Income (Canadian dollars)			
<\$40,000	–	Reference	Reference
\$40,000–\$80,000	–	9.49 (−26.07, 45.04)	7.55 (−0.86, 15.97)
>\$80,000	–	9.15 (−31.43, 49.73)	8.71 (−0.79, 18.22)
No answer	–	−10.29 (−48.98, 28.40)	12.92 (3.46, 22.40)*
Smoking status			
Non-smoker	Reference	Reference	–
Current (including occasional) smoker	−40.13 (−102.14, 21.88)	53.88 (−6.16, 113.93)	–
Ex smoker	8.95 (−16.94, 34.84)	−7.37 (−31.67, 16.92)	–
BMI	3.38 (1.52, 5.23)*	−2.52 (−4.33, −0.70)*	−0.62 (−1.05, −0.18)*
Diabetes duration	–	−0.58 (−2.18, 1.02)	–

* $p < 0.05$ significant association.

† Adjusted for wear time.

subsample of the AusDiab study that wore an accelerometer for 7 days ($n = 169$), 57% of their day was spent sedentary. More recently, Healy et al.³⁰ found that among 279 adults with type 2 diabetes who wore an accelerometer, 63% of their waking hours were spent sedentary and 25% of all sedentary time was amassed in prolonged bouts of 30 minutes or more. The results across various studies using accelerometry are strikingly similar. Our work complements this evidence to show that adults with type 2 diabetes accumulate more overall daily sedentary time and in bouts of 20 minutes or more.

Breaking up sedentary time with LPA and shifting 30-minute bouts of prolonged sedentary to non-prolonged sedentary with LPA have been associated with lower waist circumference and BMI³⁰ and higher HDL-cholesterol⁷ in type 2 diabetes populations. Therefore, breaking up sedentary time with LPA may be beneficial for adults living with type 2 diabetes. In a Taiwanese study, it was reported that television watching contributed significantly to prolonged sedentary time among people living with type 2 diabetes, when domain-specific sedentary time was investigated.³¹ Given that collectively our participants spent the majority (97%) of their time either sedentary or in LPA, we could suggest that adults with type 2 diabetes should redistribute their sedentary behaviours in favour of fewer prolonged bouts. In addition, we found significant associations between sedentary time/LPA and sex, increasing BMI, employment status, and income. Future research could consider the interaction of these socio-demographic variables and health outcomes in relation to physical inactivity.

The use of accelerometers is a strength of this study. Accelerometers allowed for the objective measurement of sedentary time and physical activity, however, accelerometers are not without error. In our study, accelerometers were worn at the waist and may not detect differences between sitting and standing, and therefore sedentary time may have been overestimated. The thresholds used to define intensity levels of activity were created from data in younger healthy adults,¹⁹ and therefore may inappropriately define the intensity of activities when performed by older adults living with type 2 diabetes. Accelerometer data reduction techniques for defining epoch length and non-wear time are other potential sources of error. Our sample was drawn from a large population-based cohort study, representative of people living with type 2 diabetes in Alberta. Participants opted in for further analyses for diet and physical activity after invitation. The sample was drawn from those who responded “yes” to the invitation. Therefore, it is possible that a group of those inclined towards diet and exercise behaviours was identified. This may have led to MVPA levels being overestimated and sedentary time levels being underestimated in this study. To test this assumption, we compared those responding yes and those responding no; those responding “no” were significantly ($p < 0.05$) older, had longer diabetes duration, and were less active.

Adults living with type 2 diabetes in this study spent the majority of their day in sedentary or light intensity physical activity, particularly those with increasing BMI. This is in contrast to self-care recommendations which encourage increased physical activity, especially MVPA, to reduce the risk of complications

associated with type 2 diabetes. Our results and those of others are extraordinarily consistent, and as such speak to the need to focus research efforts on understanding the diabetes-related health outcomes of high sedentary time and low physical activity among adults living with type 2 diabetes.

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RÉSUMÉ

OBJECTIFS : Décrire le volume et les tendances des comportements sédentaires, de l'activité physique légère (APL) et de l'activité physique modérée à vigoureuse (APMV), évalués de façon objective, et en examiner les corrélats sociodémographiques chez les adultes vivant avec le diabète de type 2.

MÉTHODE : Les participants ($n = 166$) ont porté un accéléromètre (Actigraph® GT3X+) durant les heures de veille pendant sept jours consécutifs et ont rempli un questionnaire. Nous avons décrit l'activité physique (AP) et le temps de sédentarité et procédé par régression linéaire multivariée pour estimer les associations entre le profil sociodémographique, le temps de sédentarité et l'AP.

RÉSULTATS : Les participants, dont 46 % étaient des femmes, avaient en moyenne 65,4 ans (écart-type = 9,5), un indice de masse corporelle (IMC) de 31,5 (6,6) kg/m², et vivaient avec le diabète depuis 13,1 (7,6) ans en moyenne. Les participants étaient sédentaires pendant 543,6 minutes/jour et consacraient 273,4 minutes/jour et 22,4 minutes/jour à l'APL et à l'APMV, respectivement. L'IMC était associé au temps de sédentarité accru, à l'APL réduite (−2,5 minutes/jour, IC de 95 % : −4,33 à −0,70) et à l'APMV réduite (−0,62 minutes/jour, IC de 95 % : −1,05 à −0,18). Comparées aux hommes, les femmes faisaient plus d'APL (34,4 minutes/jour, IC de 95 % : 10,21 à 58,49) et moins d'APMV (−6,2 minutes/jour, IC de 95 % : −12,04 à −0,41). Les participants sans emploi faisaient 30,05 minutes d'APMV de

plus (IC de 95 % : 3,35 à 56,75) que les personnes employées ou au foyer, et les participants qui ne déclaraient aucun revenu faisaient 13 minutes/jour de plus d'APMV que les participants de la plus faible catégorie de revenu (IC de 95 % : 3,46 à 22,40).

CONCLUSION : Les adultes vivant avec le diabète de type 2 étaient insuffisamment actifs et hautement sédentaires. Nos résultats soulignent le

besoin de pousser la recherche sur les résultats sanitaires (liés au diabète) des comportements sédentaires et de l'inactivité physique chez les personnes vivant avec le diabète de type 2.

MOTS CLÉS : accéléromètre; comportement sédentaire; activité physique; diabète de type 2