Supplementary Table S3. Results of included studies

Author, year	Dependent variable	Sample size	Exposition group	Sample size	Comparator group	*P* value	Statistical inference
Shimazaki et al. (2010)[32]	VO_{2max} (mL/kg/minute; median [quartile, third quartile])	224	Severe periodontitis VO_{2max}: 31.6 (27.4, 36.0)	936	No or mild periodontitis VO_{2max}: 28.6 (25.6, 32.5)	<0.001	OR and 95% CI for severe periodontitis by quintile of BMI, BF, and VO_{2max}: Crude OR (95% CI): BMI, OR ≤ 3.90 (2.24, 6.78), $p < 0.001$; BF, OR ≤ 2.51 (1.55, 4.06), $p = 0.002$; VO_{2max}, OR ≤ 6.88 (3.74, 12.64), $p < 0.001$ Multivariate OR (95% CI), adjusted for age, gender, number of teeth, smoking status, fasting plasma glucose, and systolic blood pressure: BMI, OR = 2.42 (1.33, 4.42), $p = 0.07$; BF, OR = 1.30 (0.75, 2.23), $p = 0.34$; VO_{2max}, OR = 2.42 (1.23, 4.78), $p = 0.02$
Eberhard et al. (2014)[33]	VO_{2peak} (mL/kg/minute; mean ± SD [95% CI])	30* 12**	Moderate periodontitis* VO_{2peak}: 27.9 ± 4.9 (26.1–29.7) Severe periodontitis** VO_{2peak}: 25.8 ± 6.6 (21.6–30)	30	No or mild periodontitis VO_{2peak}: 30.5 ± 5.3 (28.6–32.5)	0.026	Multivariate regression analysis with VO2peak as the dependent variable: Age: β = –0.173 (95% CI: –0.374, 0.027), $p = 0.09$ BMI: β = –0.702 (95% CI: –0.981, –0.323), $p < 0.001$ Physical activity: β = 0.062 (95% CI: 0.006, 0.119), $p = 0.031$ Moderate periodontitis: β = –2.008 (95% CI: –4.313, 0.297), $p = 0.087$ Severe periodontitis: β = –3.431 (95% CI: –6.568, –0.294), $p = 0.033$
Thai et al. (2014)[34]	eVO_{2max} (mL/kg/minute; mean ± SD) Mean: 39.73 ± 9.29	116 (4.05%)† 9 (0.31%)‡	Moderate periodontitis† Severe periodontitis‡ Multivariable adjusted mean eVO_{2max} (moderate/severe): 39.7 ± 60.9	2,738 (95.63%)	No or mild periodontitis Multivariable adjusted mean eVO_{2max}: 39.7 ± 60.21	1.00	Multivariable adjusted mean eVO_{2max} for PD ± (SE): ≤ 40.37 ± 0.53, $p = 0.28$ Multivariable adjusted mean eVO_{2max} for CAL ± (SE): ≤ 39.85 ± 0.39, $p = 0.99$ Participants in the highest quartile of CAL had lower odds of reduced eVO_{2max}: OR = 0.89 (95% CI: 0.64, 1.24) Individuals in the fourth quartile of PD versus the first had lower odds of reduced eVO_{2max}: OR = 0.77 (95% CI: 0.51, 1.15) Participants with moderate/severe periodontitis had statistically significant lower odds of reduced eVO_{2max}: OR = 0.48 (95% CI: 0.23, 0.98)
Oliveira et al. (2015)[35]	PFT score (mean ± SD)	40 (36%)	Moderate periodontitis PD ≥5 mm: 24 (21.6%) teeth CAL ≥4 mm: 54 (48.7%) teeth BOP categories (>15% of sites): mean 17.7 ± 10.1% PFT score PD ≥5 mm (≥1 tooth): 276.8 ± 24.7[A] PFT score PD ≥4 mm (≥1 tooth): 277.8 ± 23.6[B] PFT score BOP (>15% of sites): 283.4 ± 19.3[C]	71 (64%)	No periodontitis PFT score PD ≥5 mm (0 teeth): 293.4 ± 21.4[A] PFT score PD ≥4 mm (≥1 tooth): 285.9 ± 20.2[B] PFT score BOP (≤15% of sites): 280.3 ± 25.2[C]	0.15[A] 0.03[B] 0.94[C]	Periodontal parameters according to the PFT category (PFT maximum score): Mean PD (mm): Yes = 2.06 ± 0.33, No = 2.23 ± 0.48, $p = 0.03$ Mean CAL (mm): Yes = 2.17 ± 0.36, No = 2.56 ± 0.89, $p = 0.01$ Number of teeth with PD ≥5 mm: Yes = 0.26 ± 0.73, No = 0.72 ± 2.05, $p = 0.15$ Number of teeth with CAL ≥4 mm: Yes = 1.33 ± 2.23, No = 3.05 ± 5.1, $p = 0.04$ BOP (% of sites): Yes = 15.35 ± 8.02, No = 19.16 ± 10.93, $p = 0.04$ Logistic regression (multivariable model adjusted for confounding factors) of the association between maximum PFT score and periodontal status: Mean PD (mm), OR = 0.31 (95% CI: 0.1, 0.95 [$p = 0.04$]); mean CAL (mm), OR = 0.25 (95% CI: 0.09, 0.69 [$p = 0.01$]); BOP (%), OR = 0.01 (95% CI: 0.001, 0.46 [$p = 0.02$]); PD ≥5 mm, OR = 0.32 (95% CI: 0.10, 0.99 [$p = 0.04$]); CAL ≥4 mm, OR = 0.33 (95% CI: 0.13, 0.84 [$p = 0.02$]); moderate periodontitis, OR = 0.47 (95% CI: 0.18, 1.08 [$p = 0.07$])

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Author, year	Dependent variable	Sample size	Exposition group	Sample size	Comparator group	*P* value	Statistical inference
Eremenko et al., 2016[36]	GS (kg)	2,089	Mean CAL (mm)	NA	NA	NA	Multiple regression of GS on mean CAL (adjusted for con-founding factors after stratification according to gender): male participants, β = –1.47 (95% CI: –2.29, –0.65 [$p < 0.001$]); female participants, β = –0.38 (95% CI: –0.89, –0.14 [$p = 0.15$]). For each additional millimetre of mean CAL, GS decreased by 1.47 and 0.38 kg in men and women, respectively. Multiple regression of relative GS (10 x GSBMI) as dependent variable on mean CAL (adjusted for confounding factors after stratification according to gender): male participants, β = –0.65 (95% CI: –0.96, –0.34 [$p < 0.001$]); female participants, β = –0.24 (95% CI: –0.48, –0.01 [$p = 0.038$]) The association between GS and periodontal measures was at-tenuated in both, women and men, by introducing visceral obe-sity indicated by WHR or CRP as covariate
Hoppe et al. (2017)[37]	PFT score (mean ± SD)	NA	PD ≥5 mm (≥1 tooth): 6 (24%)[D] CAL ≥4 mm (≥1 tooth): 15 (27.3%)[E] AP (≥1 tooth): 10 (37%)[F] Endodontic treatment (≥1 tooth): 16 (39%)[G] EB (AP and/or RCT in 1 to 2 teeth): 17 (44%)[H] EB (AP and/or RCT in ≥3 teeth): 2 (22.2%)[I] OIB (EB <3 and CAL ≥4 mm): 12 (30.8%)[J] OIB (EB ≥3 and CAL ≥4 mm): 3 (18.8%)[K]	NA	PD ≥5 mm (0 tooth): 36 (41.4%)[D] CAL ≥4 mm (0 tooth): 27 (47.4%)[E] AP (0 tooth): 32 (37.7%)[F] Endodontic treatment (0 tooth): 26 (36.6%)[G] EB (no AP and/or RCT): 23 (35.9%)[H, I] OIB (EB <3 and no CAL): 26 (46.4%)[J, K]	0.16[D] 0.03[E] 1[F] 0.84[G] 0.45[H] 0.39[I] 0.12[J] 0.02[K]	Logistic regression (multivariable model adjusted for confounding factors) of the association between maximum PFT score and periodontal status: PD ≥5 mm, OR = 0.3 (95% CI: 0.09, 0.96 [$p = 0.04$]); CAL ≥4 mm, OR = 0.31 (95% CI: 0.11, 0.89 [$p = 0.03$]); EB (AP and/or RCT in 1 to 2 teeth), OR ≤ 1.79 (95% CI: 0.60, 6.16 [$p = 0.27$]); EB (AP and/or RCT in ≥3 teeth), OR ≤ 0.79 (95% CI: 0.7, 4.52 [$p = 0.22$]); OIB (EB <3 and CAL ≥4 mm), OR = 0.44 (95% CI: 0.16, 1.2 [$p = 0.11$]); and OIB (EB ≥3 and CAL ≥4 mm), OR = 0.19 (95% CI: 0.04, 0.87 [$p = 0.03$])

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Author, year	Dependent variable	Sample size	Exposition group	Sample size	Comparator group	*P* value	Statistical inference
Holtfreter et al. (2021)[21]	CPET test (median [25th, 75th quartile]): VO_{2peak} (mL/minute, and ml/kg/minute), VO_2@AT (mL/minute), VÉ/VCO_2 slope, O_2HR_{max} (mL/beat), and exercise duration (minute)	NA	Mean PD (mm) and CAL (mm)	NA	NA	NA	Multiple linear regression of CPET as dependent variable on mean PD (adjusted for confounding factors after stratification according to two cross-sectional study populations {mean [95% CI]}): VO_{2peak} (mL/minute): SHIP-1 ≤ 2052 (2016–2087 [$p < 0.001$]), and SHIP-Trend-0 ≤ 2031 (2002–2060 [$p < 0.001$]) VO_{2peak} (mL/kg/minute): SHIP-1 ≤ 26.4 (25.9–26.9 [$p < 0.001$]), and SHIP-Trend-0 ≤ 25.6 (25.2–26 [$p < 0.001$]) VO_2@AT: SHIP-1 ≤ 1124 (1106–1141 [$p = 0.02$]), and SHIP-Trend-0 ≤ 1015 (1000–1031 [$p = 0.02$]) VÉ/VCO_2 slope: SHIP-1 ≤ 25.69 (25.25–26.13 [$p = 0.2$]), and SHIP-Trend-0 ≤ 27.53 (27.24–27.81 [$p = 0.006$]) O_2HR_{max}: SHIP-1 ≤ 13.41 (13.22–13.60 [$p = 0.07$]), and SHIP-Trend-0 ≤ 13.16 (12.97–13.34 [$p = 0.009$]) Exercise duration: SHIP-1 ≤ 9.4 (9.2–9.5 [$p < 0.001$]), and SHIP-Trend-0 ≤ 9.9 (9.7–10 [$p < 0.001$]) Multiple linear regression of CPET as dependent variable on mean CAL (adjusted for confounding factors after stratification according to two cross-sectional study populations {mean [95% CI]}): VO_{2peak} (mL/minute): SHIP-1 ≤ 2045 (2010–2080 [$p < 0.001$]), and SHIP-Trend-0 ≤ 2033 (2012–2055 [$p < 0.001$]) VO_{2peak} (mL/kg/minute): SHIP-1 ≤ 26.1 (25.6–26.5 [$p < 0.001$]), and SHIP-Trend-0 ≤ 25.6 (25.2–26.1 [$p = 0.018$]) VO_2@AT: SHIP-1 ≤ 1115 (1111–1159 [$p = 0.049$]), and SHIP-Trend-0 ≤ 1013 (994–1032 [$p = 0.64$]) VÉ/VCO_2 slope: SHIP-1 ≤ 25.76 (25.24–26.29 [$p = 0.07$]), and SHIP-Trend-0 ≤ 27.37 (27.01–27.73 [$p = 0.07$]) O_2HR_{max}: SHIP-1 ≤ 13.52 (13.28–13.77 [$p = 0.02$]), and SHIP-Trend-0 ≤ 13.14 (12.92–13.37 [$p = 0.2$]) Exercise duration: SHIP-1 ≤ 9.3 (9.2–9.5 [$p < 0.001$]), and SHIP-Trend-0 ≤ 10.1 (9.9–10.2 [$p < 0.001$]) While in participants younger than 50 years, no statistically significant associations of mean PD or mean CAL with VO_{2peak} were observed, participants older than 50 years had lower VO_{2peak} values with increasing mean PD

AP = apical periodontitis; BF = percentage body fat; BMI = body mass index; BOP = bleeding on probing; CAL = clinical attachment loss; CPET = cardiopulmonary exercise testing; EB = endodontic burden; eVO_{2max} = estimated maximum amount of oxygen consumption during exercise; OIB = oral inflammatory burden; O_2HR_{max} = peak oxygen pulse; OR = odds ratio; PD = probing depth; RCT = root canal treatment; SD = standard deviation; SE = standard error; SHIP-2 = study of health in Pomerania; VÉ/VCO_2 slope = slope of the minute ventilation changes as a function of the pulmonary carbon dioxide output; VO_{2max} = maximum oxygen consumption during exercise; VO_{2peak} = maximum oxygen consumption over a 30-second period during the test; VO_2@AT = oxygen uptake at anaerobic threshold; β = regression coefficient; 95% CI = 95% confidence interval; and NA = not applicable.

CITATION

Da Silva Barbirato D, Gomes de Matos BLD, Guimarães TC, Medeiros de Barros MC. The impact of periodontitis on physical fitness: a systematic review. *Can J Dent Hyg.* 2026;60(2):132–40.