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ABSTRACT

Purpose: Functional Threshold Power (FTP), determined as 95% of the average power during a 20-minute time-trial test, is suggested as a practical test for the determination of the maximal lactate steady state (MLSS) in cycling. Therefore, the objective of the present study was to determine the validity of FTP in predicting MLSS. **Method:** Fifteen cyclists, 7 classified as trained and 8 as well-trained (mean ± standard deviation; maximal oxygen uptake = 62.3 ± 6.4 mL/kg/min, maximal aerobic power = 329 ± 30 Watts), performed an incremental test to exhaustion, an FTP test, and several constant load tests to determine the MLSS. The bias ± 95% limits of agreement (LoA), typical error of the estimate (TEE), and Pearson´s coefficient of correlation (r) were calculated to assess validity. **Results:** For the power output measures, FTP presented a bias ± 95% LoA of 1.4 ± 9.2%, a moderate TEE (4.7%), and nearly perfect correlation (r = 0.91) with MLSS in all cyclists together. When divided by the training level, the bias ± 95% LoA and TEE were higher in the trained group (1.4 ± 11.8% and 6.4%, respectively) than in the well-trained group (1.3 ± 7.4% and 3.0%, respectively). For the heart rate measurement, FTP presented a bias ± 95% LoA of −1.4 ± 8.2%, TEE of 4.0%, and very - large correlation (r = 0.80) with MLSS. **Conclusion:** Therefore, trained and well-trained cyclists can use FTP as a noninvasive and practical alternative to estimate MLSS.

Key-words: validity; cycling; time-trial; performance; threshold.

INTRODUCTION

Maximal lactate steady state (MLSS) is defined as the highest constant intensity of exercise that can be maintained for a longer period without the continuous increase in blood lactate concentration ([La^{-}]), and it is the gold-standard parameter for aerobic evaluation.[1–3] MLSS determination is based on several (2–5) 30-min tests performed on different days,[2] thus requiring several visits to the laboratory, which is not practical and accessible for many athletes. In cycling one of the most well-known and controversial concepts is the Functional Threshold Power (FTP), which is defined as the highest power that a cyclist can maintain in a quasi-steady state without fatigue for approximately 1 hour.[4] When power exceeds the FTP, fatigue will occur much sooner, whereas power just below the FTP can be maintained considerably longer.[4] Measurement of the FTP is suggested as a practical and noninvasive test (e.g., 60-min time-trial [TT]; FTP_{60}) for predicting MLSS.[4]

The time that a trained or well-trained cyclist sustains until exhaustion at MLSS intensity is approximately 60 min; however, there is great individual variability (range, 30–70 min).[5–8] In addition, as demonstrated by Harnish et al.[9] and Campbell et al.,[10] the velocity at 40-km TT (approximately 60 min) has trivial differences and nearly perfect correlations (r = 0.92 and 0.99, respectively) with the velocity at the MLSS.[9,10] However, a TT duration of approximately 60 min is extremely stressful and difficult to perform in outdoor conditions. Thus, in an attempt to make its determination more practical, a protocol composed of a specific warm-up of 45 min and a TT of 20 min was proposed, where FTP corresponds to 95% of the average power (FTP_{20}).[4] Recently, the FTP_{20} demonstrated a trivial difference and very large correlation with FTP_{60} (effect size [*d*] = 0.14, r = 0.88), and the time to exhaustion at FTP_{20} (51 ± 16 min)[11] was close to that found at MLSS (48.2–55.2 min).[5–8] In addition, FTP_{20} demonstrated trivial differences (*d* < 0.2) and moderate to nearly perfect correlations (r = 0.61–

0.90) with the anaerobic threshold (AnT).[11,12] The AnT demarcates the highest intensity in which the production and elimination of [La$^-$] are in equilibrium during an incremental test.[1]

The validity of various versions of the FTP test, such as 8-, 20- and 60-min TT, in relation to the AnT has already been well studied.[11–14] However, although AnT measurement is the most common test to predict MLSS,[1,15] the relationship between AnT and MLSS is conflicting.[1,15,16] In addition, FTP has been used to determine heart rate (HR) and power output training zones, calculate metrics of training load and intensity (i.e., Training Stress Score [TSS] and Intensity Factor [IF]), and prescribe the training intensity, with the assumption of interchangeability with the MLSS. However, to the best of our knowledge, no study has tested the validity of FTP_{20} against MLSS. Moreover, FTP is based on a TT test; therefore, the training level and experience of the cyclist is a key factor in FTP determination. As demonstrated by Valenzuela et al.,[12] FTP_{20} underestimated the AnT by 6.5% and 1.6% in cyclists classified as recreationally trained (RT) and trained (T),[17] respectively. The study showed a very large correlation (r = 0.77) between the differences (bias) in FTP_{20} and AnT and the maximal aerobic power (MAP).[12]

Therefore, the objective of the present study was to determine the validity of FTP_{20} for the prediction of MLSS and in the cyclists divided by training levels classified as trained and well-trained.

METHODS

Participants

The criteria for participation in the study were cyclists who had trained for at least 3 years, been competing regularly, and performed the FTP_{20} protocol at least once previously. Thus, 15 male cyclists (mean ± standard deviation [SD]: age: 35.3 ± 5.0 years, weight: 75.0 ± 7.4 kg, and height: 176.0 ± 7.4 cm) fulfilled the criteria for participation. The cyclists were classified according to training level by using the maximal oxygen uptake ($\dot{V}O_2max$) value relative to body weight (mL/kg/min) as a criterion according to the guideline of de-Pauw et al.[17] Thus, 7 cyclists were classified as trained (T; $\dot{V}O_2max$ 55 − 64.9 mL/kg/min); and 8, as well trained (WT; $\dot{V}O_2max$ 65 − 71 mL/kg/min). After verbal and written explanations of the procedures, all the subjects signed an informed consent approved by the institutional ethics committee.

Design

To investigate the concurrent validity between FTP_{20} and MLSS, the cyclists performed in this order: an incremental test, the FTP_{20} protocol, and several tests to determine the MLSS. The riders were asked to refrain from strenuous exercise in the 48 h preceding each test. Participants were given at least 2 and a maximum of 4 days between visits and all tests were completed within 3 weeks. All the tests were conducted under standardized laboratory conditions of 20°C and 40–50% relative humidity, and the tests were performed in the same time of day (± 1 h). The tests were performed on the electrically braked bicycle ergometer Velotron (Dynafit Pro, Racer Mate Inc, WA, USA), which was modified with a racing saddle, adjustable stem, and the subject's pedal system in the first visit and replicated in further tests. The accuracy of Velotron is described elsewhere.[18]

PROCEDURES

Incremental test

The incremental test was started at 100 W, with increments every 3 min of 30 W until maximum voluntary exhaustion. During the test, HR and oxygen uptake ($\dot{V}O_2$) were continuously measured (Quark PFT Ergo, Cosmed, Rome, Italy). The $\dot{V}O_2$ data were plotted as a function of the power in an average of 30 sec, and the highest value was considered the $\dot{V}O_2max$. Maximal HR (HRmax) was defined as the highest individual value. Maximum aerobic power (MAP) was determined as the load (W) corresponding to the last stage completed by the subject during the incremental test. If the last stage was not completed, MAP was determined in accordance with the method of Kuipers et al.[19]

Functional threshold power

The FTP_{20} protocol was performed using the RacerMate Interactive 3D software (RacerMate Inc, WA, USA). During the test, the participants could view their progress over the course on a computer monitor and be provided with information on the time completed and gear selected; all other information was blinded, no verbal encouragement was provided, and water was allowed *ad libitum*.[20] FTP_{20} was performed in accordance with the procedure described by Allen and Coggan.[4] The warm-up duration was 50 min as follows: a) 20 min at a self-selected easy intensity; b) 3- × 1-min fast pedaling accelerations (100–105 rpm) with a 1-min recovery between the efforts; c) 5 min at a self-selected easy intensity; d) 5-min time-trial; e) 10 min at a self-selected easy intensity; and 5 min of resting. The main part of the test consisted of a 20-min TT, where the participants were asked to produce the highest mean power output possible for 20 min and adopt their personal pacing strategies. During the test, HR was continuously monitored using the standard HR telemetry (RS800CX, Polar Electro Oy, Finland). FTP_{20} and FTP_{20} HR ($FTP_{20\ HR}$) were determined as 95% of the mean power output and HR of the 20-min TT, respectively.

Maximal lactate steady state

For determination of the MLSS, several constant load submaximal tests with a duration of 30 min were performed on different days at an interval of at least 48 h. Prior to each test, a warm-up of 5 min was performed at 100 W. MLSS was considered the highest exercise intensity in which [La^-] did not show an increase of >1 mmol/L during the final 20 min of the test.[2] The intensity of the first test corresponded to the FTP_{20} (95% of the mean power of the

20-min TT). If during this test, a steady state or decrease in $[La^-]$ was observed, the intensities of the subsequent tests were increased by 5% until the steady state of $[La^-]$ could not be observed. If the $[La^-]$ during the first test did not show a steady state and/or the exhaustion of the cyclist occurred before the end of the 30-min period, the subsequent intensities were decreased by 5%. Blood samples of 25 μL from the ear lobe were collected before each exercise and every 10 min during the MLSS testing for further determination of $[La^-]$ (YSI 2700 Stat Plus, Yellow Springs, OH, USA). MLSS HR ($MLSS_{HR}$) was determined as the average value of the last 20 min of the constant load trial. MLSS was determined with a precision of 5%.

Statistical analyses

The descriptive statistics are presented as means ± SD or 90% confidence interval (90% CI). A spreadsheet was used for the analysis of concurrent validity.[21] Before the analysis, data were transformed using the natural logarithm to reduce nonuniformity.[22] Thus, we calculate the following between MLSS and FTP_{20}: a) Cohen's[23] (*d*) effect sizes; b) the Pearson's correlation coefficient (r); c) the typical error of the estimate (TEE; also called standard error of estimate); d) the standardized TEE (TEEs), calculated as TEE in raw units divided by the SD of the values of the MLSS predicted by the FTP_{20};[21] and e) the bias ±95% of limits of agreement (1.96 × SD of the differences [LoA]) of the Bland and Altman analysis.[24] Cohen's[23] *d* effect sizes and unpaired Student's *t* tests were used to compare the magnitude of the differences between the groups. The *d* values were interpreted using the following scale: <0.20 (trivial), 0.2–0.6 (small), 0.6–1.2 (moderate), 1.2–2.0 (large), 2.0–4.0 (very large), and >4.0 (extremely large).[22] Correlation coefficients were interpreted as follows: <0.09 (trivial), 0.1–0.29 (small), 0.30–0.49 (moderate), 0.50–0.69 (large), 0.70–0.89 (very large), 0.90–0.99 (nearly perfect), and 1 (perfect).[22] To interpret the magnitude of the TEEs, half of Cohen's *d* thresholds should be calculated and interpreted as follows: <0.1 (trivial), 0.1–0.3 (small), 0.3–

0.6 (moderate), 0.6–1.0 (large), 1.0–2.0 (very large), and >2.0 (extremely large).[25] For the Student’s *t* tests, the statistical significance was set at $P < 0.05$.

RESULTS

The cyclists’ overall characteristics and classification by training level are presented in Table 1. The differences between the WT and T cyclists were trivial to moderate and not statistically significant ($P > 0.05$) in any of the parameters measured in absolute units. However, when normalized by body weight, the parameters were statistically significant ($P < 0.05$) and large to very large greater (d = 1.73 to 2.76) in the WT group in relation to the T group.

For all the cyclists, the difference was trivial ($d < 0.2$), the bias ±95% LoA was 1.4 ± 9.2%, TEE was moderate (4.7%), and the correlation was nearly perfect (r = 0.91) between FTP_{20} and MLSS for power output measure. The FTP_{20} power output occurred at the same intensity of the MLSS in 6 cyclists (bias = 0%), underestimated by 5% in 3 cyclists, overestimated by 5% in 5 cyclists, and overestimated by 10% in 1 cyclist (Figure 1; Table 2).

Considering the division of the training level, the bias between FTP_{20} and MLSS was similar in T and WT groups (1.4% and 1.3%, respectively). However, the ±95% LoA and TEE were 1.6 (90% CI, 0.9–3.1) and 2.1 (90% CI, 1.1–4.1) times higher in the T group than in the WT group, respectively. The WT group showed a higher association with the power output measures (r = 0.94) than the T group (r = 0.91; Table 2).

The bias ±95% LoA between FTP_{20HR} and $MLSS_{HR}$ was −1.4 ± 8.2%, with a TTE of 4.0% and r of 0.80 (n = 15). The validity of the HR measures is presented in Table 3 and Figure 1C, D.

It is interesting that we found a large correlation (r = 0.67; 90% CI, 0.32–0.86) between FTP_{20} − MLSS bias (%) and the 5-min TT performance (% of MLSS) performed during the warm-up (Figure 2).

DISCUSSION

This study demonstrates a trivial difference, nearly perfect correlation and acceptable prediction errors between FTP_{20} determined in accordance with the protocol of Allen and Coggan[4] and the MLSS.

MLSS is not a practical method because it involves performing several tests on different days. Thus, for at least 40 years, more practical prediction tests have been studied.[15] To our knowledge, this is the first study to confront the validity of FTP in predicting MLSS in cyclists. Previously the prediction of MLSS from a 40-km TT test (i.e., FTP_{60}) was based on the measurement of speed,[9,10] which is not a reliable measure of intensity in cycling.[26] Moreover, a 60-min TT test is not practical based on the complexity and psychological and physical stress elicited by a test of a longer duration. On the other hand, FTP_{20} has only 25 min of accumulated maximum effort (the 5-min TT inserted in the warm-up and 20-min TT), so it is a more practical test.

When analyzing the individual results, we verified that in 14 cyclists, the differences between the FTP_{20} and the MLSS were within the range of 5% overestimation or underestimation, and only 1 rider presented a difference of 10%, generating a bias ±95% LoA of 1.4 ± 9.2% (Figure 1B). Thus, the results of the present study seem difficult to accept as valid because intensities approximately 5% higher than the MLSS, the physiological steady state (i.e., [La^-]), did not occur and some subjects did not complete the 30-min period.[2,27] However, the most common test to predict MLSS is the incremental test using AnT.[1] When we analyzed several studies that tested the validity of various AnT methods determined from [La^-]

or ventilatory responses in predicting MLSS, the ±95% LoA, which accounts for 95% of individual differences between measures,[24] ranged from 9.5% to 43%.[16,28–31] Continuing with the MLSS prediction tests, critical power (CP) is commonly used and presents a ±95% LoA of 8.6% to 19.0%.[27,32,33] Therefore, the results for random errors of prediction from FTP_{20} are near or lower than those commonly found in the literature for methods used to predict MLSS.

Furthermore, in their book entitled, "Training and Racing with a Power Meter", Allen and Coggan[4] suggested measurement of CP as the practical test for determining FTP. Both the 20-min TT and CP are reliably measured in the field.[36,37] However, the CP value is dependent on the duration of the tests performed and the mathematical model used. The CP determined in tests between 1–15 and 1–20 min from the linear and hyperbolic functions of the two-parameter models, respectively, overestimated the MLSS by approximately 9%.[27,32] However, by using tests between 1–24 min and the hyperbolic function of the three-parameter model, a trivial difference between MLSS and CP was found (2 ± 12 W, mean ± SD).[33] MacInnis et al.[34] using only 4- and 20-min TTs and the CP linear model, found that CP overestimated FTP_{60} by ~5%. Therefore, using the CP determined in the short tests such as FTP, the training load metrics (i.e., TSS, IF…), and the training zones might have important changes.

Determination of FTP_{20} is based on a performance test (i.e., TT); thus, the training level and experience of the cyclist is a key factor in the test result. In the present study, for both cyclists classified as T and WT, the systematic error of prediction was trivial ($d < 0.2$ and bias = 1.3–1.4%). Nevertheless, random errors of prediction were higher in the T group than in the WT group (TEE = 6.4% and 3%; ±95% LoA = 7.4% and 11.8%). Recently, Valenzuela et al.[12] compared FTP_{20} with AnT (Dmax method) in cyclists classified on the basis of the MAP (W/kg) as T and RT, and verified that random errors of prediction were similar for both the T and RT cyclists (±95% LoA = 7.8% and 8.3%, respectively). However, in the RT and T cyclists, FTP_{20} underestimated the AnT by 6.8% and 1.6%, respectively. An important point to emphasize is that all cyclists in the present study had performed the FTP_{20} protocol 1 to 4 times previously, so they were already familiar with the protocol.

In FTP_{20}, trivial differences were found from MLSS, AnT,[11,12] and FTP_{60}[11] by using the subtraction of 5% of the mean power of the 20-min TT, based on the complete warm-up protocol proposed by Allen and Coggan.[4] However, recently, MacInnis et al.[34] showed that FTP_{60} corresponded to 90% of the mean power of the 20-min TT when the warm-up before the 20-min TT was performed at moderate intensity for 15 min. Thus, the subtraction of 5% of the average power of the 20-min TT is recommended when the warm-up protocol according to Allen and Coggan[4] is performed. According to Allen and Coggan,[4] the main goal of the 5-min TT incorporated in the warm-up is to "'open' up the legs for the rest of the effort". We found a large association (r = 0.67) between the bias % between FTP_{20} and MLSS and the performance in the 5-min TT (% of MLSS; Figure 2). These results demonstrate that cyclists who sustained the highest percentage in relation to MLSS during the 5-min TT tended to also sustain a greater percentage in relation to the MLSS during the 20-min TT. These results can be explained by the anaerobic capacity of cyclists, as demonstrated by de Souza et al.,[35] where cyclists who had a higher anaerobic capacity had a higher MAP (i.e., the power around the 5-min TT).

Although power output is the best measure of intensity in cycling,[26] there are still cyclists who do not have power meters. In addition, training intensity is also prescribed and monitored on the basis of HR. Allen and Coggan[4] suggested five HR zones of intensity based on the percentages of FTP_{20HR}. The results of this study showed a bias ±95% LoA of −1.4 ± 8.2%, between HR corresponding to MLSS and FTP_{20}. These results were smaller than those reported previously between FTP_{20} and FTP_{60} (2.5 ± 10.5%) and between FTP_{20} and AnT 1.3 ± 11.9% for HR measurement.[11] However, in spite of the accuracy between the HR results, the use of HR should be interpreted with caution because several factors can alter HR values, such as the drastic increase in HR during prolonged exercise, especially in hot environments, which is a phenomenon described as cardiac drift.[26]

To determine the MLSS, several visits to the laboratory were necessary; therefore, determining this marker in athletes was a difficult task due to the need to change the training routine for a relatively long period. Thus, the limitations in the present study refer to the inclusion of non-professional cyclists; however, all the participants of this study had training routines and participated in regular competitions. In addition, the limitation of the low number of subjects (n = 15). According to Hopkins,[21] a validity study must have at least 50 subjects to have a good inference capacity for the population. Moreover, the prediction equation could be used to calibrate the values.

PRACTICAL APPLICATIONS

This study has important practical implications because FTP is a key metric for determining training zones and training load monitoring (i.e., IF, TSS, and derivates metrics). Thus, on the basis of the perspective that the prediction errors between FTP and MLSS are equal to or even smaller than those commonly reported in the literature, coaches and cyclists can use FTP_{20} as an estimate of MLSS. However, we suggest that cyclists should be previously familiar with the FTP_{20} protocol.

CONCLUSION

The present study demonstrates trivial differences, nearly-perfect correlation, and moderate random errors of prediction between FTP_{20} and MLSS in T and WT cyclists. In this way, T and WT cyclists and coaches can use FTP_{20} as a noninvasive and practical alternative for estimating MLSS.

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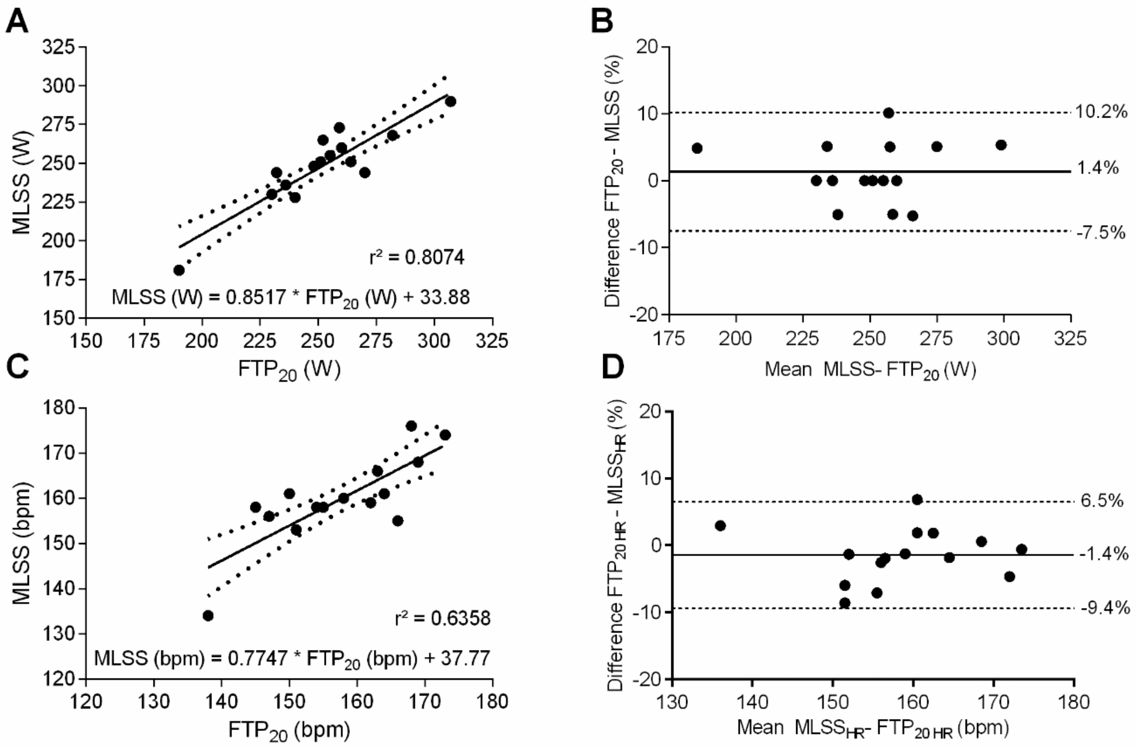

Figure 1. The relationship between the MLSS and FTP_{20} for power output (A) and heart rate (C) measures, solid and dashed lines represent the regression line and the 90% confidence intervals, respectively. Bias (continuous line) and the 95% limits of agreement (discontinuous lines) between the two variables using the Bland and Altman[24] analysis for power output (B) and heart rate (D) measures.

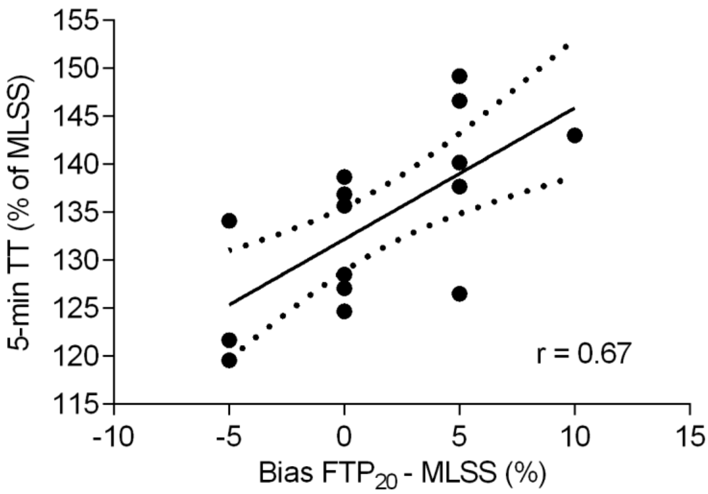

Figure 2. Relationship between the 5-min TT performance (% of MLSS) and the bias between FTP and the MLSS. Solid and dashed lines represent the regression line and the 90% confidence intervals, respectively.

Table 1. Parameters determined during the incremental test, FTP_{20} protocol and maximal lactate steady state.

Parameters		**All cyclists**	**Well-Trained**	**Trained**	**P-value**	***d***
Cyclists	(n)	15	8	7		
$\dot{V}O_2max$	(L/min)	4.6 ± 0.5	4.8 ± 0.5	4.5 ± 0.4	0.210	0.68
	(mL/kg/min)	62.3 ± 6.4	67.1 ± 3.9	57.5 ± 3.1	>0.001	2.76
MAP	(W)	328.6 ± 30.3	345.4 ± 20.4	330.9 ± 39.0	0.399	0.47
	(W/kg)	4.6 ± 0.4	4.6 ± 0.3	4.2 ± 0.3	0.001	2.24
HRmax	(bpm)	184.7 ± 7.2	182.7 ± 6.8	186.5 ± 7.5	0.329	0.53
5-min TT[a]	(W)	331.9 ± 33.0	330.1 ± 34.2	333.9 ± 34.2	0.836	0.11
	(W/kg)	4.5 ± 0.3	4.6 ± 0.3	4.3 ± 0.2	0.029	1.27
FTP_{20}[b]	(W)	251.7 ± 26.3	257.1 ± 26.2	245.6 ± 26.9	0.417	0.43
	(W/kg)	3.4 ± 0.3	3.6 ± 0.2	3.1 ± 0.2	0.001	2.19
	(% of MAP)	74.3 ± 3.7	74.3 ± 3.9	74.4 ± 3.7	0.981	0.01
	(bpm)	157.6 ± 10.1	156.3 ± 8.2	158.8 ± 11.9	0.659	0.24
	(% of HRmax)	85.3 ± 4.3	85.6 ± 3.9	85.1 ± 4.8	0.833	0.11
MLSS	(W)	248.3 ± 25.0	253.4 ± 20.6	242.6 ± 29.9	0.439	0.42
	(W/kg)	3.4 ± 0.3	3.6 ± 0.2	3.1 ± 0.3	0.009	1.73
	(% of MAP)	73.3 ± 3.2	73.3 ± 3.4	73.3 ± 3.2	0.996	0.00
	$[La^-]$ (mmol/L)	4.1 ± 1.0	4.1 ± 1.0	4.0 ± 1.0	0.723	0.19
	(bpm)	159.8 ± 9.8	158.9 ± 4.3	160.6 ± 13.1	0.740	0.18
	(% of HRmax)	86.5 ± 4.0	87.0 ± 2.2	86.1 ± 5.2	0.667	0.23

All data presented as mean ± SD; a = 5-min TT inserted in the warm-up protocol; b = determined as 95% of 20-min TT; bpm = beats per minute; *d* = effect size; HRmax = maximal heart rate*;* L/min = liters per minute; mL/kg/min = milliliter per kilogram of body weight per minute; MAP = maximal aerobic power; W = watts; W/kg = watts per kilogram of weight; $[La^-]$ = blood lactate concentration

Table 2. Concurrent validity of FTP_{20} to predict MLSS based on power output measure.

Parameters	All cyclists	Well- trained	Trained
Mean difference ± SD	1.4 ± 4.7	1.3 ± 3.8	1.4 ± 6.0
(% [90% CI])	(0.7 – 3.5)	(-1.1 – 3.9)	(-2.8 – 5.8)
p-value	0.213	0.300	0.599
d (90% CI)	0.13	0.16	0.11
	(-0.47 – 0.73)	(-0.68 – 0.97)	(-0.78 – 0.98)
	Trivial	Trivial	Trivial
± 95% LoA (%)	9.2	7.4	11.8
TEE (% [90% CI])	4.7	3.0	6.4
	(3.6 – 7.1)	(2.1 – 5.9)	(4.2 – 13.8)
TEEs (90% CI)	0.45	0.37	0.46
	(0.27 – 0.78)	(0.17 – 0.86)	(0.19 – 1.32)
	Moderate	Moderate	Moderate
r (90% CI)	0.91	0.94	0.91
	(0.79 – 0.97)	(0.76 – 0.99)	(0.60 – 0.98)
	Nearly perfect	Nearly perfect	Nearly perfect

CI = confidence interval; *d* = effect size; LoA = limits of agreement; SD = standard deviation; TEE = typical error of estimate; TEEs = typical error of estimate standardized; r = coefficient of correlation

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Table 3. Concurrent validity of FTP_{20HR} to predict $MLSS_{HR}$ based on heart rate measure.

Parameters	**Results**
Mean difference ± SD (% [90% CI])	-1.4 ± 4.2 (-3.2 – 0.5)
p-value	0.205
d (90% CI)	-0.22 (-0.82 – 0.39) Small
± 95% LoA (%)	8.2
TEE (% [90% CI])	4.0 (3.0 – 6.0)
TEEs (90% CI)	0.75 (0.43 – 1.51) Large
r (90% CI)	0.80 (0.55 – 0.92) Very large

n = 15; CI = confidence interval; *d* = effect size; LoA = limits of agreement; SD = standard deviation; TEE = typical error of estimate; TEEs = typical error of estimate standardized; r = coefficient of correlation