Should you warm up with a weighted bat? Baseball Research Review, I
DECEMBER 21, 2012 BY SHOWMESTRENGTH 1 COMMENT

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Babe Ruth often seen swinging 3 of his 36 inch, 40-47 oz bats!
A major event in any youth baseball players career is that moment when he or she takes that first practice swing using a coveted bat weight/donut/or other heavily marketed weighted bat contraption.

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At that moment, one feels like a Greek god, Hercules on Mt. Scopus, as one joins the ranks of those professional baseball players one places up on that pedestal. If they swing them, and blast mammoth home runs, then I should do the same, right?

Well, contrary to almost universal baseball wisdom, bat weights might not actually carry any weight at all when it comes to preparation, and in fact, you might actually be doing more harm than good!

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SWING AND A MISS!
We want you to be aware of the actual science behind the training to limit those rather unfortunate swings and misses. Below we review two research papers which demonstrates the effect of swinging a bat weight on subsequent swing velocity.

EFFECT OF WARM-UP WITH DIFFERENT WEIGHTED BATS ON NORMAL BASEBALL BAT VELOCITY
Journal of Strength and Conditioning Research 23(5): 1566-1569, 2009.
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Methods
19 male recreational baseball players, with high school or junior college experience minimum, were asked to complete a general warm up routine and then placed into 3 test conditions: a light bat (LB) group (33in/ 9.6oz), a normal bat (NB) group (33in/ 31.5 oz) or a heavy bat (HB) group (33in/ 55.2 oz). Participants were asked to take 5 warm up swings, each of which was recorded for bat velocity, and then following a 30 second break, completed 5 maximal swings with the normal bat.

ResultsScreen Shot 2012-12-21 at 11.01.10 AM
The authors found that warming up with the light bat was significantly faster than that of the normal bat or the heavy bat. However, they found that when testing the post warm up velocity when participants returned to the normal bat, the light bat warm up group and the normal bat warm up group had statistically significantly higher swing velocity.

Authors Conclusions
The authors conclude that during a warm up in which a player is trying to increase subsequent bat velocity, they should warm up with either a lighter or normal bat. Using a heavy bat is discouraged because it appears to reduce swing speed upon returning to a normal weighted bat.

Limitations
This study is limited for one by the fact that only recreational players were used. A subsequent study of professional caliber hitters should be undertaken. Also, the study does not account for the phycological or biomechanical advantage that swinging with a heavier bat may subsequently provide to a batter. It is also possible, and has been seen in other such studies, that the bat speed returns to normal after the first post warm up swing; however, because they averaged the post swing velocities, this is not evident.

AFTER-EFFECTS OF USING A WEIGHTED BAT ON SUBSEQUENT SWING VELOCITY AND BATTERS' PERCEPTIONS OF SWING VELOCITY AND HEAVINESS.
Percept Mot Skills. 2002 Feb;94(1):119-26.
Otsuji T, Abe M, Kinoshita H.
Graduate School of Human Sciences, Osaka University, Japan.

Methods
8 varsity university male baseball or softball players participated in this study. In each case, the participant swung an unweighted bat 5 times (control), followed by 5 swings the bat weighted with a 800 gram bat ring weight (weighted condition), and 5 more again without the weight (post-weighted condition). Participants were given 15 seconds rest between each swing. They conducted 3 sets of these 15 swings, with a 10 minute rest between sets.

Additionally, after the 5th swing of the weighted condition and the 1st, 3rd, and 5th post-weighted swing the participants were asked to subjectively rate both the heaviness of the bat and the relative speed compared to the control condition. They rated heaviness on a scale of apparently lighter (5) to apparently heavier (1) and relative speed on a scale of apparently faster (5) to apparently slower (1) with (3) being equal in both cases.

ResultsScreen Shot 2012-12-21 at 11.42.53 AM
The authors found that the average post-weighted swing velocity did not significantly change from the normal control bat swings; however, there was a significant decrease in the swing velocity of the first attempted post-weighted swing.

As far as perception of heaviness and relative speed, the participants felt that the first post-weighted swing, the bat felt both lighter and speed velocity faster than the control condition.

Authors Conclusions
The authors conclude that using a weighted bat does not, contrary to popular belief, elicit an increase in bat speed. As with the previous study, they conclude that it should not be used to increase bat speed, but may only provide a psychological benefit to the batter. They postulated about neuromuscular cause of the decreased bat velocity. They noticed that other studies had demonstrated that using a weighted bat may increase activation of both agonist and antagonist musculature associated with the swing pattern.

Limitations
There are still limitations to this study as noted by the authors themselves and further study is needed to clarify the neuromuscular mechanisms of bat speed inhibition following a weighted swing. Additionally, they do not go into the biomechanical changes which may occur along with the weighted bat swing.

OVERALL MESSAGE: Baseball is generally very slow to adapt to research and scientific inquiry. While more study is necessary, these and other studies seem to conclusively demonstrate that swinging a weighted bat does not increase bat speed, at least immediately following weighted swings. There still may be beneficial training mechanisms using a weighted bat; however, swinging 6 bats in the on-deck circle will not help you mash Ruthian home runs. In fact, I'd like to personally slap myself in the face for doing so for some many years of my career. I am still not fully convinced that there may be some important biomechanical advantages that swinging a bat may provide a batter, but further study is necessary. Happy smart swinging!

Myth-busted

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