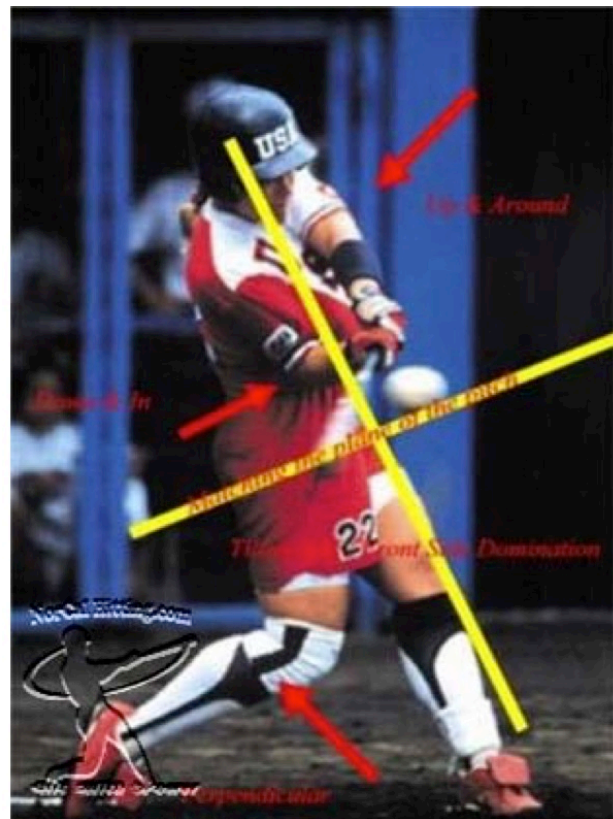
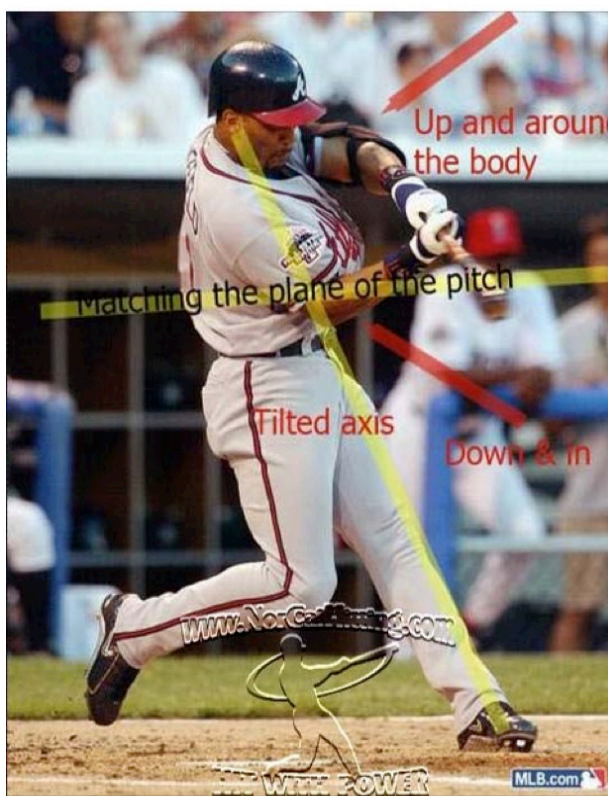


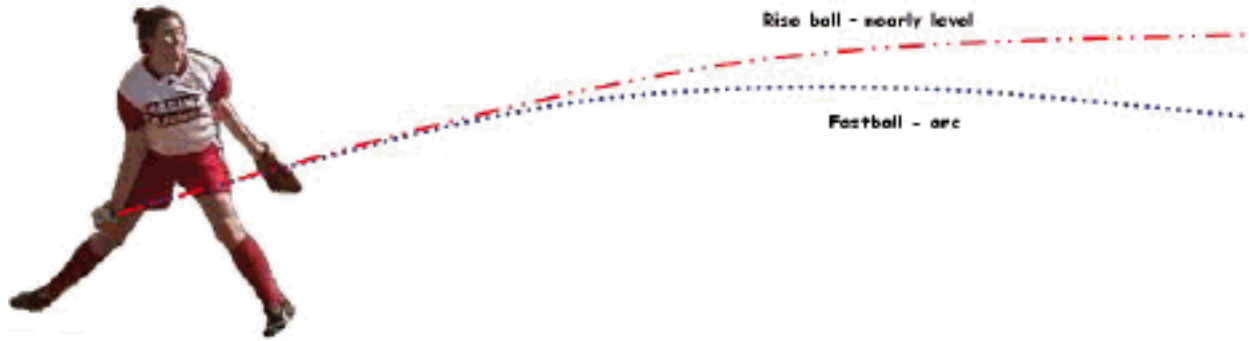
2016 Batting misconceptions that I have learned.

As a perpetual student of the game, I am always looking for the best information available to teach to players to enable them to reach the fullest of their potential. In the course of my coaching experience, I have heard several chestnuts of wisdom that are regularly instructed to players that are actually misdirections, but have been repeated so many times that every one assumes they are cast in stone. Like "Tie goes to the runner" which, although is often correct, is neither a rule nor a given. (In the umpires judgement, the ball must beat the runner to the base.)

I've done some research inquiring of DI Coaches, players, Hitting coaches and a few MLB hitting coaches as well as watching video, reading many articles and a few books on the subject including *the Physics of Baseball*. The following are the perpetual misconceptions that I found:



"There is a difference between the baseball swing and the softball swing"- maybe in years past there was, but not anymore. Now the top coaches and hitting instructors refer to the 'Elite swing' or "high level swing" that applies to both sports. There is no difference between the swings of the top college Fastpitch players and top MLB players. the differences in swings is typically limited to pitch location. That and the bigger, stronger players (in both sports) can use mechanics that may not be as effective for smaller players.



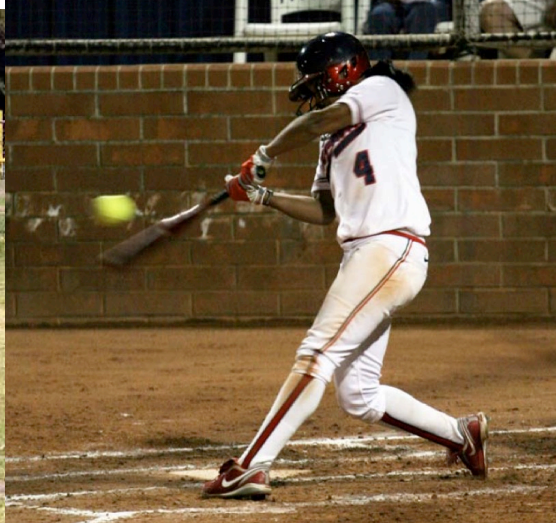
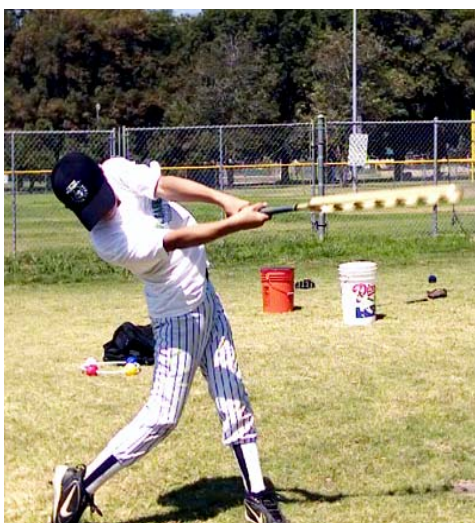
"The baseball pitch starts high and has a downward trajectory. The Fastpitch pitch starts low and has an upward trajectory". - Not necessarily. The Fastpitch pitch starts low but follows an *arc* trajectory. Starts out on an upward path until gravity takes over and it starts dropping. That is why batters with a positive (or upward) attack angle of **5 to 10 degrees** are hitting line drives. Over 20 degrees = fly ball. 30+ degrees = pop up. Negative (or downward) attack angle = ground ball or pop-up.

The human brain makes the adjustment for Gravity and the *perception* is that a fastball comes in flat when it is actually dropping. With the riseball, it follows an upward trajectory and then flattens out as it reaches the batter. When the ball doesn't drop as the brain expects, the *perception* is that it is breaking upward.



"Pop flies are caused by an uppercut swing"-*sometimes*, yes, when there is too much uppercut, but more often than not it is the result of contact with the bottom half of the ball, which is the one symptom that will consistently cause pop-ups. The two swings above look similar, yet according to the captions with each, one is a pop-up and one is a line drive, extra base hit.

"Uppercut Swing" implies that the attack path of the bat is too steep and a steep attack angle can result in a high fly ball / pop up in the IF or a can-of-corn to the OF. If a batter tees off at the incorrect angle (too much bend at the waist) this *creates* an uppercut swing which is a *symptom* but not the actual problem. That said, when the plane of the swing is correctly matching the plane of the pitch, it will have a slight upward angle (5 - 20 degrees) which to some could look like an uppercut swing. In such a case, the "upercut" swing would be the correct swing.



Too much bend at the waist.

Good upward attack angle.



"Hit the bottom half of (or swing down on) the ball to impart backspin which creates line drives" - On this subject, Ted Williams said "If you're that f***ing good, why don't you just hit the f***ing middle of the ball EVERY TIME?" There is disagreement over whether backspin helps a ball travel farther or not, but the only evidence of this that I could find was purely anecdotal with no measurable benefit in Fastpitch. Except in Slow Pitch, to hit the ball (baseball or softball) in such a way that you get good contact with significant beneficial backspin is almost impossible.

When you are talking about a collision of a round ball moving at 60 mph with a round bat moving at 60+ mph in the opposite direction that takes place in 1/2000 of a second over a distance of 3/4" by a High school player, you will hit more into the ground (or pop-ups) than you will hit line drives. the physics concludes relatively little additional carry from imparting backspin (and into the wind, it may be less). In his book *"The Physics of Baseball"*, Dr Adair notes that while perfectly executed backspin may keep the ball aloft longer, it still needs to be hit hard enough to get out of the park, otherwise "it's just a 370 foot out". Plus it is "astronomically more prone to timing error" to swing down to a downward moving pitch in order to try to hit the bottom 35% of the ball and create the perfect backspin.

Plane matching is far better for a longer zone and more consistent contact. Line drives are the result of solid contact where the plane of the swing matches the plane of the incoming pitch.

"The batter should be fully extended at (or into) contact"-False. High definition images of Elite level hitters at contact show the top-hand elbow kept tight to the ribs (the arm bent at the elbow, forming an "L") while the bottom-hand elbow is high (no higher than shoulder) leading the way in front. Hands are palm up/palm down and higher than the barrel of the bat.

Immediately *after* contact the arms are fully extended in a "V" pointing toward the outfield. Patrick Murphy (Alabama) says extension at contact is ok when needed to reach the outside pitch.

"Keep your weight back / Don't hit off the front foot."- All the MLB and top college FP players shift their weight forward, sometimes coming off their rear foot entirely. *How much* weight comes off the rear foot has more to do with pitch location than anything.

This often mis-applied direction originated with coaching younger batters who lunge at the ball, rather than waiting for the pitch to reach them. It is not the weight on the front foot that's the problem, it's the off-balance, leaning forward as you swing that's the problem. *weight too far forward*.

Keeping the weight back is acceptable only when sitting on a change up, but otherwise is contrary to high-level mechanics. .

"Squish the bug"- this is a term that was used with young players who were first starting out that forces a movement that *looks like* what happens when the weight is shifted correctly in the swing. The move has little to no effect on the transfer of power but is intended to introduce the batter to the concept of incorporation of the lower body into the swing, which leads to transfer of the weight from the backside forward. but it can also cause too much focus on the rear foot, resulting in holding the batter's weight back over it, which is wrong.

"Line up the door knocking knuckles"- some do, most don't. It's not an absolute, just a matter of personal preference. Albert Pujols does. Miguel Cabrera does not . The pros that do not start with those knuckles lined up, do have them more or less lined up at contact with the hands in a palm up/palm down position relative to the plane of the pitch. palm up/palm down at contact is the intention of this cue, whether you start that way or not. Cabrera (and others) align the knuckles at the base of the fingers on one hand with the door knocking knuckles of the other hand. The grip on the bat during the swing is loose enough so that the hands rotate slightly during the swing toward aligned door knocking knuckles. this is preferred by many while others (like Ralph Weekly/Tennessee) insist that keeping the knuckles aligned from start to contact enables a faster swing.

"The swing needs to be quick and short/compact. There is no time for negative movement (load) in Fastpitch."-True and False. While you need to be short to the ball, elite level mechanics require a negative move/load to initiate the swing. The swing that starts with the elbows at an even height, forming an upside-down "V" is ok as long as the swing doesn't just go forward from there without a preliminary negative movement/load. At contact, the barrel needs to be below the hands.

"Knob to the ball"- is just one point along the path traveled by the bat in a correct swing path. It is partly about getting the hands and bat on plane with the pitch. It also means to POINT the knob toward

the origin of the pitch at the part of the swing before contact (this phase is called Bat Lag) and then *release the club head into contact*. You DON'T move the knob toward the ball. You do NOT pull or push the knob toward the ball. **Bat Lag**- bat more or less horizontal with knob forward. Shoulders and hips at 45 deg. Lead with front elbow high but not above shoulder, top hand elbow stay close to body (don't let that elbow get ahead of hands)

Additional thoughts:

Correct swing mechanics has a lot in common with correct overhand throwing mechanics which is why many hitting instructors start their instruction with observing how the player throws, and working on the throw first. (The weight shift is very similar)

The swing happens so quickly that the batter cannot be thinking of what to do as they await the pitch- it has to happen automatically with fine adjustments happening in fractions of a second. That is why it is important to develop the correct mechanics in practice, so the swing is ingrained and fine adjustments can happen during the swing without compromising power.

FWIW- Mark McGwire has been an advocate for imparting backspin and credits his success to the hitting coach who taught him this. Video of his swing during his 70 HR season shows him making contact on the upswing, *not on the downswing!* This is a good example of "What the batter *thinks* they do and what their swing *actually* does is not necessarily the same " Even in MLB.