Understand the Core

Talking about core training is hip today, so there are a lot of core classes that do every kind of crunch imaginable, but just doing a lot of sit-ups is not training the core properly and functionally. We need to understand how the core works in order to train it properly. The core is the body center and includes the abdominals, back, hips and buttocks.

All movement emanates and stabilized from the core

That is if your body functions properly, research shows that the "inner unit" (deep back muscles (multifidus), deep abdominal wall (tranversus abdominis), pelvic floor muscles, and the diaphraghm, with the assistance of the internal oblique and latissimus dorsi. Those muscles working as a unit with the thoraco lumbar fascia will fire 110-130 milliseconds before leg movement, and 30-50 milliseconds before arm movement.
The inner unit muscles will stiffen the spine, rib cage and pelvic girdle in order to create a working foundation for the bigger outer muscles to move from.
If the inner unit job is mainly to stabilize the spine, rib cage and pelvic girdle, the outer unit musculature which consist of the outer, bigger muscles, is mainly responsible for movement, such as rectus abdominis, external oblique, lumbar erector, lattisimus dorsi and others.
To be more precise the outer unit muscles can be prime movers in one movement and stabilizer in another movement pattern.
There is an old saying: "you cannot fire a cannon from a canoe". If your spine is not stabilized by the inner unit musculature, the outer unit big muscles will have no anchor to work from, will not be used to their full potential, and there will be a lot of stress on the lower spine and back.
If the spine is not stable the extremities will have to compensate and do most of the work. Which means more stress on the shoulders, hips, knees and ankle joints.

The core is the crossroads of the body

All functional movement starts from ground reaction. Energy has to be transfered through the legs, through the body center to the arms, or from the arms through the core to the legs. If your core and spine are not stable, and if the pelvic girdle is out of alignment energy is not going to transfer fully.

Other functions of the core:

1) Protection of your central nervous system and internal organs
2) Support of your internal organs

When your body moves and is exercised correctly, the internal organs will be mobilized. This natural mobilization helps keep your organs from adhering together, improves fluid flow through the organs and is very helpful in maintaining normal bowel habits.
The outer unit muscles are like the engine in your car. The inner unit is like the suspension system, and the bolts that hold the frame together and the wheels on. It doesn't matter how strong your engine is if the frame breaks and the wheels fall off!
If you do a lot of sit-ups you magnify the imbalance, it has to be done with proper strengthening of the inner unit.