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Special report

Practicing perception

Eyes can be trained to be more effective

George Brett says it helped him get to the major leagues. Willie McGee credits it for extending his career. Barry Bonds says it gives him an edge. Devon White says it turned his career around.

They are talking about visual sensory training, a regimen of tests and drills designed to enhance visual skills such as focus, depth perception and hand/eye coordination.

"The drills won't help you read a lower line on the eye chart, but they can help you see an object in motion much clearer," said Bill Harrison, an optometrist in Laguna Beach, Calif.

Harrison is one of the pioneers of visual sensory training.

Although he was a pitcher at Cal-Berkeley (and teammate of Andy Messersmith) more than 30 years ago, he always was fascinated by the science of hitting - particularly seeing the ball well.

"I was intrigued by a guy like Ted Williams," he said. "What did he have that others didn't? What made a guy like Williams special? I've seen lots of people with 20/10 eyesight who can't hit a baseball worth a darn. So there must be more to it than that."

Harrison, 53, discovered that elements such as dynamic acuity, tracking, contrast sensitivity and alignment have as much to do with it as pure vision.

"There are so many spokes in the wheel," he said.

Most people thought Harrison was loony, but he caught the ear of former Kansas City Royals owner Ewing Kauffman, who opened the innovative Royals Baseball Academy in Florida in 1970.

"I approached Mr. Kauffman with my ideas, and he seemed like a progressive guy with a lot of vision," Harrison said. "He flew me down in 1972, but I had a surprise. He wanted me to work with his major league team, not just the college kids at the academy."

The '72 Royals noticed immediate, startling results: Richie Scheinblum jumped from .143 the previous season to .300. Ed Kirkpatrick went from .219 to .275. Lou Piniella went from .279 to .312.

When he began his playing career, Piniella was a one-eyed hitter. Although he had 20/20 vision in both eyes, his brain was paying attention to just one eye at a time.

Not only that, he often switched eyes during the course of the same pitch - less than half a second!

Several weeks of visual training using a vectogram - a device in which two polarized pictures are slowly separated manually - and other apparatuses corrected that problem.

George Brett was another one of Harrison's disciples.

"Initially, George had poor depth perception," Harrison said, "but we also found another thing with him. Every time he blinked, he had double vision for a split second afterwards - particularly while going after popups at third base."

After two weeks of daily, half-hour drills with a vectogram, he eliminated the problem.

Vision drills run the gamut from tracking a ball tethered to a string to reacting to patterns of flashing lights.

"To improve a player's focus and help him overcome distractions, he might be asked questions while performing jumping jacks.

"To improve tracking skills, a player would have to identify rapidly moving numbers projected onto a wall. After 20 or so numbers, the player is asked how many 8's he saw. Or how many 2's or 5's.

"To work on hand/eye coordination, a player looks at a lightboard the size of a big-screen TV. Red dots flash randomly, and the player has to touch each one as it lights up. The trick is to keep up as they speed along faster and faster.

"I probably have about 50 different drills and pieces of equipment that I use," Harrison said.

Much like learning to swim, once you gain the techniques, you keep the knowledge for life.

"It is totally unlike pushups or situps, where once you stop, you lose what you've gained," Harrison said. "It's more like riding a bicycle. You don't have to work on these drills all the time, but there is a value to staying sharp.

"Ideally, if you work half an hour per day for a three-week period, you maintain the maximum benefits."

Over the years, players such as Dusty Baker, Barry Bonds, Bobby Bonilla, Don Mattingly, Will Clark and Tony Gwynn have discovered the benefits of vision training.

When outfielder Devon White was still with the California Angels, general manager Mike Port kept urging him to visit Harrison because "he's right in your backyard." White resisted. Finally, in 1990 - White's last year with the Angels - Port personally brought him in.

Was it just a coincidence that White's average jumped from .217 to .282 the following year?

"He started seeing the ball a helluva lot better, I can tell you that," Harrison said. "But the one thing I want to stress is that I can't take the credit for any of these guys' success. They did it all themselves. I give them the information, but they do the rest with their hard work."

White admits the program "turned my career around."

Baltimore outfielder Brady Anderson, who tied a major league record with 11 home runs in April, worked with Harrison in 1992.

"He had a surprisingly good grasp of how important it is to see the ball," Anderson said. "That offseason, the vision training became part of my routine, just like lifting weights and running. If it's something you think might help you, you try it. It was fun."

Some of the newer converts this year include Johnny Damon, Michael Tucker and Joe Randa of Kansas City.

Atlanta's Chipper Jones gets tested by Harrison each year, although he confesses he doesn't use the vision exercises. Still he sees a value in even that limited use.

"It helps you get an idea on your depth perception. You pull apart these two handles and there is like a maze in front of you and you tell him when you start to lose focus. I can pull apart to a certain point, but I'm sure somebody like Barry Bonds is way out here (spreading arms). Look at all the home runs he hits."

Another big center for visual training is Pacific University Family Vision Center in Portland, Ore., where optometrists Brad Coffey and Alan Reichow have tested more than 2,000 athletes. That number includes about 100 baseball players, but Coffey declined to identify any of his clients.

Most of the visual training is done on an individual level. Few teams put much stock in it.

"There is scattered interest," Harrison said, "but most organizations don't put a lot of emphasis on it. It's a low priority. Things take a while to catch on."

The biggest believer among baseball executives is Syd Thrift, the Baltimore Orioles' director of player development. Most of the teams he has been associated with in his 39-year career have done some sort of visual training.

When Thrift was general manager of the Pittsburgh Pirates, he had a visual training room installed near the visitors' batting cage.

"It was strictly voluntary," Thrift said, "but the players could hardly wait to get to BP after coming out of that room."

When Thrift did consulting work for the Dodgers in 1991, players at Class AAA Albuquerque were given visual training.

"One of the guys we helped the most was (relief ace) John Wetteland," Thrift said. "The next year, he was in the majors for good."

"When I was with the Cubs, a guy who really benefited was Jose Vizcaino. He hit .287 (in 1993) with 19 doubles. He'd never hit like that before."

Said Vizcaino: "It helped me to see the ball, to concentrate and to have better timing. It definitely contributed to my success the last couple of years."

Thrift, who met Harrison when he was director of the Royals Academy, probably has taken baseball to new levels of science and technology.

He went so far as to change the color of his team's baseball caps - because of the eyes.

That came about as the result of a conversation 25 years ago with a friend, John Nash Ott, founder of the Environmental Health and Light Research Institute in Sarasota, Fla.

Ott told Thrift that eyes absorb energy from sunlight, energy that can influence things as diverse as blood pressure and cholesterol level.

Further, certain colors such as red, orange, yellow and green absorb much less light than colors at the other end of the spectrum.

Ott asked Thrift, "Why do you have all that green in the cap brims?"

Thrift replied that was how baseball always did it.

Ott convinced Thrift that light reflects off the underside of the visor, and that if the visor was gray, it would absorb more of the light's energy and the players actually would feel stronger.

"I called the New Era Cap Company and got 'em to switch all our caps to gray," Thrift said. "In retrospect, I wish we had patented it. We could have called it Academy Gray or Thrift-Vision."

A quarter-century later, virtually every team in baseball has gray instead of green on the underside of the brim.

"We know a lot more than we did 25 years ago," Thrift said. "The hard part is getting people to listen."

By Bill Koenig, Baseball Weekly