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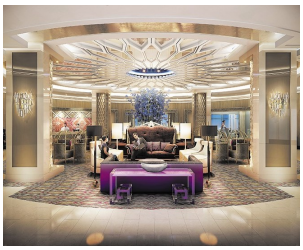
AMA *Guides*, 6th Edition, Training and other medical topics*

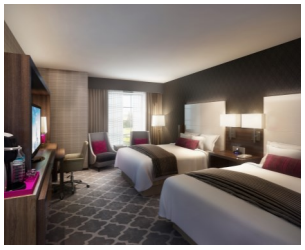
Saturday & Sunday, June 10-11, 2017

Guest House at Graceland

3600 Elvis Presley Boulevard, Memphis TN

*Meets requirements for physicians seeking appointment to the Medical Impairment Rating Registry. CME Credits Available. Contact: Jay.Blaisdell@TN.gov for registration details.

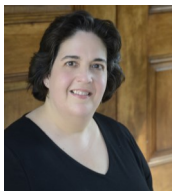




NEW MIR PHYSICIAN ADVISORY BOARD MEMBERS

AdMIRable Review offers special thanks to three veteran MIR Physicians, one representing each grand division of the state, who have agreed to serve as advisors to Administrator Abbie Hudgens regarding new MIR Physician appointments.

EAST TN DIVISION: Lisa A. Bellner, MD, is the principle physician of PM&R Associates, located in Knoxville, TN. Her specialties are musculoskeletal medicine, pain management, and electrodiagnosis. She is certified by the American Board of Physical Medicine and Rehabilitation and is a diplomat of the National Board of Medical Examiners.



MIDDLE TN DIVISION: David West, DO, is the principle physician of West Sports Medicine and Orthopedics in Nashville, TN. He is certified by the American Osteopathic Board of Orthopedic Surgeons (AOBOS) and is a Fellow to the American Osteopathic Academy of Orthopedics (FAOAO). He holds membership in the American Osteopathic Association and American Osteopathic Academy of Orthopedics.

WEST TN DIVISION: Michael D. Calfee, MD, is the principle physician of Advanced Orthopedics and Sports Medicine, PLLC, located in Union City, TN. He is board certified in Orthopedic Surgery and in Sports Medicine and specializes in foot and ankle injuries, total joint replacement, industrial injuries, carpal tunnel and hand surgery, sports medicine and arthroscopic surgery.

Medical Impairment Rating Registry
Tennessee Bureau of Workers' Compensation
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CG.WCMIRProgram@tn.gov

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MIR PHYSICIAN SPOTLIGHT
GALEN R. SMITH, MD

Dr. Galen R. Smith's commitment to excellence is evident in every MIR Report that he produces. His strict adherence to the *Guides*, in addition to the objective evidence he uses to support his opinions, has established him as an accurate and impartial evaluator in the eyes of both employees and employers. Citing the *Guides* in a language that non-physicians can understand, he explains clearly and succinctly the reasons why his impairment rating might differ from those of other physicians. He submits his MIR Reports well ahead of their due dates, and his contact person, Trish Davis, is extremely helpful in every scheduling request. In short, Dr. Smith and his team are paragons of competent, compassionate service.

Dr. Smith began his medical practice in Kingsport, Tennessee, with Associated Orthopedics of Kingsport in 1983. He has been a member of this group ever since. Based on the comments of several of his colleagues at Indian Path Medical Center (IPMC) in Kingsport, Dr. Smith's professionalism is overshadowed only by his humility.

"He's great to work with," says Linda Ware, a Registered Nurse at IPMC. "He's a perfectionist, but he's very compassionate with his patients. And he's an excellent teacher for us. I've never met a more compassionate, more intelligent, more capable doctor and person in my whole life."

According to his colleague, Robert T. Strang, MD, Dr. Smith also has "a very high sense of duty. He's very loyal to his patients, and he has been very loyal to our group and to the orthopaedic community in Kingsport."

In 2014, Dr. Smith decided to transition his career to an exclusively office practice. "I felt it was better to stop doing surgery while people still have a high opinion of my skills rather than wait too long. It is always a very emotional and tough decision for a surgeon. However, I think I made a very good choice at that point in my career. After I transitioned to office practice only, I decided to become more professional in my impairment rating expertise. As an orthopedic surgeon, I had to give impairment ratings for musculoskeletal injury and

GALEN R. SMITH, MD

disease over the years. But frankly I was, at best, average in doing a good impairment rating. With the 6th edition of the *Guides,* where the rating has become more complex, I especially felt I was not prepared. I went to two courses that Mr. Blaisdell [MIRR Program Coordinator] sponsored, one in Nashville and one in Knoxville. These courses were invaluable to me. I also got to connect with Dr. James Talmage, Tennessee's superstar in impairment rating expertise. I can't say enough good things about Dr. Talmage. I remember at the courses I took that Dr. Talmage emphasized that the whole issue is to 'try to get it right.' Whenever I would have a question about AMA *Guides* methodology, I would e-mail Dr. Talmage. He always responded very promptly and gave me great advice."

JAMES B. TALMAGE, MD

A member of the Medical Impairment Rating Registry since June 2014, Dr. Smith is board certified in Orthopedic Surgery and Spine Surgery. He attended Louisiana State University Medical School and completed his orthopedic residency at the Campbell Foundation, University of Tennessee College of Medicine, in 1982. He completed a spine surgery fellowship under the direction of Dr. Henry Bohlman, at Case Western University in Cleveland, Ohio, in 1983.

"In 2003 we invaded Iraq," says Dr. Smith. "I got a form letter from the United States Army saying they were in desperate need of orthopedic surgeons. But I had—and still do—a very comfortable life here. I have a wonderful wife and boys—at the time they were three-years old. And I came close to throwing that letter in the trash, but I kept it on the corner of my desk for a couple of weeks and kept thinking it over and thinking it over. And then I took that letter home and discussed it with my wife. And I told her I didn't want to get into my senior years and look back and say I was too comfortable, too lazy, too woulda-coulda-shoulda, and didn't. My father and his two brothers served in World War II—one the Army, one in the Air Force, and my Dad in the Navy. He was in the reserves after World War II and he got called up to Korea. And all three of them had the same thing in common. None of them made the military a career. They all served at the time of our country's need. And I felt it was my time."

In the Spring of 2003, with his wife's backing, Dr. Smith called the Army. "And by October 2003 I was sworn in as an officer in the U.S. Army Reserve Corp. I thank the Army for letting me serve at the three levels of care for injured soldiers. The FST—the Forward Surgical Team—is the smallest unit that they put a doctor in—in the Army. Then the combat support hospital in Iraq that I was in is the second largest unit. And then the Landstuhl Regional Medical Center is the largest unit. So I got to serve in all three. This opportunity to serve our brave servicemen and women was really a

Indian Path Medical Center

Continued on page 7

VISUAL SYSTEM IMPAIRMENTS

James B. Talmage, MD, and Jay Blaisdell, CEDIR VI

In keeping with the functional assessment philosophies presented in Chapters 1 and 2 of the 6th edition of the *Guides*, Chapter 12, The Visual System, considers the combined perceptual ability of both eyes in the service of Activities of Daily Living (ADL). Consequently, the left eye is not rated without combining it with the right eye, and disfiguring and other anatomical changes are not considered in this chapter. They are rated from Section 11.3.

OVERVIEW: TERMS AND METHODOLOGY

Visual impairment is based primarily on objective measurements of visual acuity and visual field. Visual acuity refers to the sharpness or clarity of vision and is typically measured by the examinee's ability to distinguish letters or other symbols arranged in standardized decreasing size and space. Visual field refers to peripheral vision and may be objectively measured through a variety of standardized manual or automated tests while the examinee is focused on a fixed object. Applying the individual and combined eye results of visual acuity tests to Table 12-2 on page 288, the rater derives a Visual Acuity Score (VAS) for right eye (OD), left eye (OS), and binocular vision (OU) and uses each in Table 12-3 on page 289 to obtain a single Functional Acuity Score (FAS). In similar fashion, applying the individual and combined eye results of field vision tests to Table 12-6 on page 296, the rater derives a Visual Field Score (VFS) for right eye, left eye, and binocular vision and uses each in Table 12-7 on page 297 to obtain a single Functional Field Score (FFS). The rater then multiplies the FAS and FFS and divides the result by 100, per the "Basic Rule" on page 304, to obtain the Functional Vision Score (FVS). Finally, since the FVS is an ability score (0 = no ability, 100 = normal ability), the rater subtracts it from 100 to arrive at the Visual System Impairment (VSI). The VSI is converted to Whole Person Impairment (WPI) using the rule and formula in the right column of page 306 as demonstrated by Figure 12-8 on page 307.

STEP 1: OBTAIN FUNCTIONAL ACUITY SCORE (FAS).

MIR Physicians, such as family physicians and occupational medicine practitioners, who are not eye specialists, but who, nevertheless, are chosen to evaluate an eye injury, might benefit from reviewing standard visual acuity testing procedures before the evaluation. Visual acuity is usually measured with letters or other symbols on a standard printed or light-projected chart, such as a Snellen Chart. Visual acuity is annotated as a fraction with the numerator representing an accepted standard and the denominator representing the examinee's performance relative to that standard. If, for example, the examinee is unable to recognize symbols unless they are twice as large as the standard, the fraction is expressed as 1/2. In the United States, the fraction is usually expressed with a numerator of 20, so 1/2 becomes 20/40, 1/3 becomes 20/60, 1/4 becomes 20/80, etc. Wearing their best corrective glasses or contact lenses, examinees read down the chart from a distance for which the chart was designed until they are unable to recognize the symbols in question. If the examinee reads more than half of the symbols (e.g., 3 of 5) on a given line, it is considered read. The MIR Physician uses the visual acuity value of the last line read, as annotated on the chart, to assign the examinee's visual acuity. This process should be repeated for each eye and finally with both eyes resulting in 3 visual acuity values.

Using Table 12-2 on page 288, the MIR Physician translates these 3 visual acuity values into their respective Visual Acuity Scores (VAS). These Visual Acuity Scores are inserted into a formula found in Table 12-3 on page 289 to assign the Functional Acuity Score (FAS).

VISUAL SYSTEM IMPAIRMENT RATING PROCESS

STEP 1: Obtain Functional Acuity Score (FAS).

A) Measure visual acuity for left eye, right eye, and binocular vision.
B) Obtain a Visual Acuity Score (VAS) for left eye, right eye, and binocular vision using Table 12-2 on page 288.
C) Convert these 3 Visual Acuity Scores to a single Functional Acuity Score (FAS) using Table 12-3 on page 289.

STEP 2: Obtain Functional Field Score (FFS).

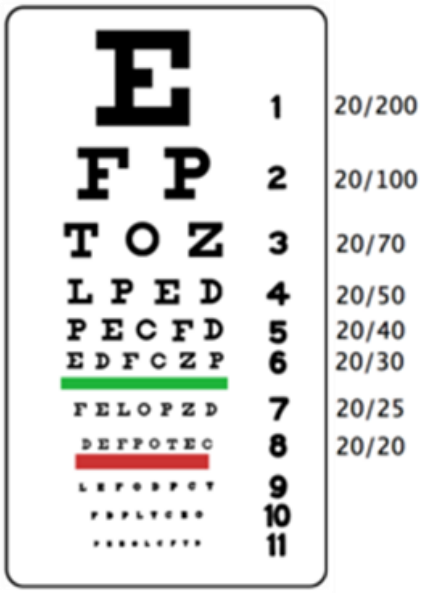
A) Measure visual field for left eye and right eye. Superimpose the two results to obtain binocular field vision.
B) Obtain a Visual Field Score (VFS) for the left eye, right eye, and binocular vision using Figure 12-1 on page 295 and Table 12-6 on page 296.
C) Convert these 3 Visual Field Scores to a single Functional Field Score (FAS) using Table 12-7 on page 297.

STEP 3: Obtain Visual System Impairment (VSI).

A) Convert the Functional Acuity Score (FAS) and Functional Field Score (FFS) to a Functional Vision Score (FVS) using the Basic Rule on page 304.
B) Subtract the Functional Vision Score (FVS) from 100 to obtain the Visual System Impairment (VSI).

STEP 4: Obtain Whole Person Impairment (WPI).

Convert the Visual System Impairment (VSI) to Whole Person Impairment (WPI) using the rule on page 306 or Figure 12-8 on page 307.

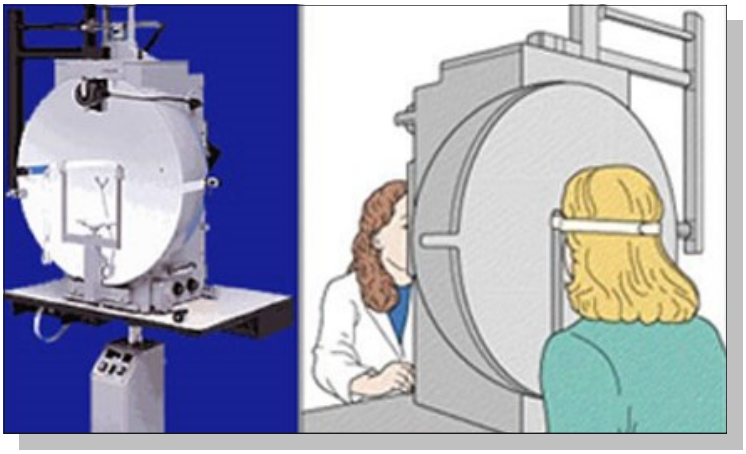


Typical Snellen Chart

(Continued from page 4)

STEP 2: OBTAIN FUNCTIONAL FIELD SCORE (FFS).

Field vision is tested using either manual (kinetic) or automated (static) perimeters. If the MIR Physician is not an eye specialist who is able to test field vision, the MIR Physician should give careful consideration to the reliability, scope, and date of existing field test results to determine if additional tests should be scheduled. Static field vision tests are considered unreliable if either false positives or false negatives exceed 20% or if fixation errors are greater than 30%. False positives are the number of times the examinee signifies that stimuli are seen in the absence of stimuli. False negatives are the number of times that the examinee fails to respond to stimuli that should have been seen based on earlier responses. Fixation errors are the number of times that the patient looks away from the central target. Visual field testing should be conducted by an ophthalmologist or other licensed and trained medical doctor with perimetry equipment capable of detecting deficits well outside the central 60˚ radius of the



Goldmann Manual Perimeter

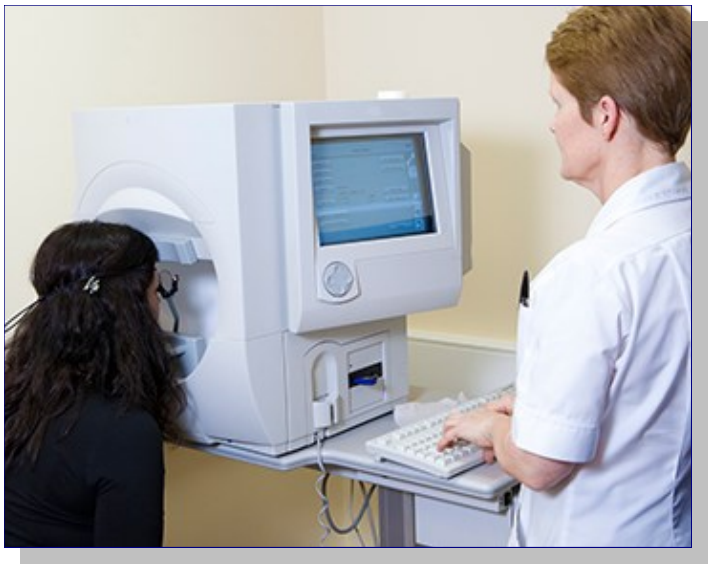
examinee's field of vision. If additional field tests are needed, the MIR Physician should contact the MIRR Program Coordinator. If the examinee claims, and the MIR Physician suspects, that there is no visual field deficit, the MIR Physician may conduct a simple Confrontation Visual Field test, as described on page 293, to confirm that the field of vision appears normal.

The results of Goldmann manual perimetry equipment, where the test operator manually moves stimuli of various sizes into the examinee's field of vision until they are detected, are more direct for impairment purposes because they are plotted as contour lines, called isopters, which outline the areas of stimuli perception much like a contour map. These isopters have different names based on the stimulus size and intensity. The Goldmann III-4e isopter, or its equivalent, is necessary to rate visual impairments. The majority of field vision tests, however, are now conducted on automatic perimeters, such as Humphreys and Octopus brand machines, in which static stimuli of different intensities appear at various locations in the vision field. Automatic perimetry results are "commonly plotted as a gray scale," which must then be translated into the "pseudoisopter equivalent to the Goldmann III-4-e isopter" as demonstrated in Example 12-11 on page 301. If automated visual field plots are available in lieu of Goldmann visual field plots, the MIR Physician should create a pseudoisopter "by drawing a line surrounding all points with a sensitivity of 10 dB or better, excluding points with less than 10 dB sensitivity (see Figure 12-5)." [1 (295)] If the MIR Physician is not an eye specialist and needs assistance converting automated perimeter results into their pseudoisopter equivalent, the MIR Physician should contact the Program Coordinator to arrange for additional payment for consultation with an eye specialist pursuant to TN Rules and Regulations 0800-2-20-.07 (2).

Once the Goldmann III-4-e isopter, or its pseudoisopter equivalent, has been plotted, the MIR Physician constructs and applies the testing grid in Figure 12-1 on page 295 in conjunction with Table 12-6 on page 296 to determine the examinee's Visual Field Score (VFS) for the eye in question. A normal VFS is typically around 100.

The testing grid in Figure 12-2 is constructed by either drawing it on the visual field plot of the III-4-e isopter (or its equivalent) or by overlaying a transparency of the testing grid on the field plot. The circular testing grid is divided into four quadrants (upper left and right, lower left and right) with 10 meridians drawn from the center of the quadrant, 3 extending in each lower quadrant and 2 extending in each upper quadrant, at the following degree positions: 25˚, 65˚, 115˚, 155˚, 195˚, 225˚, 255˚, 285˚, 315˚, and 345˚.

With the completed testing grid superimposed on the Goldmann III-4-e isopter (or its pseudoisopter equivalent), the MIR Physician should record the peripheral extent (as measured in degrees from the center of the Field of Vision [FOV]) of each meridian while consulting Table 12-6. For each meridian, the examinee receives 1 point for stimulus seen at 2˚ intervals for the first 10˚, and then 1 point for each stimulus seen in the peripheral 20˚ and beyond. For example, vision along a meridian extending to a FOV of 8˚ yields 4 points and vision along a meridian of 40˚ yields 8 points. Please note



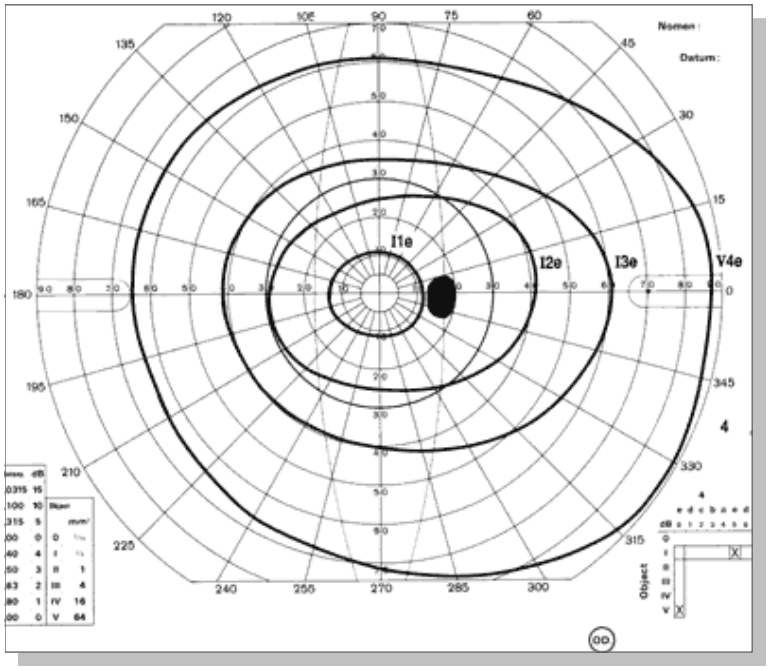
Humphreys Field Analyzer Automated Perimeter

[1]Rondinelli R, Genovese E, Katz R, et al. *Guides to the Evaluation of Permanent Impairment*. 6th ed. Chicago, IL: AMA, 2008

(Continued from page 5)

that the location on the meridian is rounded to the nearest 2° within the center 10° of the FOV. Outside 10° of the FOV, the location on the meridian is rounded to the nearest 10°. If a scotoma (blind spot) overlaps a meridian, subtract the radial extent of the scotoma according to Table 12-6 from the meridians point value. Finally, with the value of each of the 10 meridians assigned, the MIR Physician summates the points to arrive at a total, which is the Visual Field Score (VFS) for the eye that was tested.

The entire process is repeated to arrive at the VFS for the other eye, and yet again, with the two monocular fields imposed on



"Standard isopters on the Goldmann perimeter for the right eye of a normal 43-year-old patient. The Roman numeral identifies the stimulus size, and Arabic numeral and letter identify the stimulus intensity."
http://www.oculist.net/downaton502/prof/ebook/duanes/pages/v3/v3c049.html

the testing grid, to assign a VFS for binocular vision. The 3 Visual Field Scores (left eye, right, binocular vision) are then entered into Table 12-7 on page 297 to arrive at a Functional Field Score (FFS).

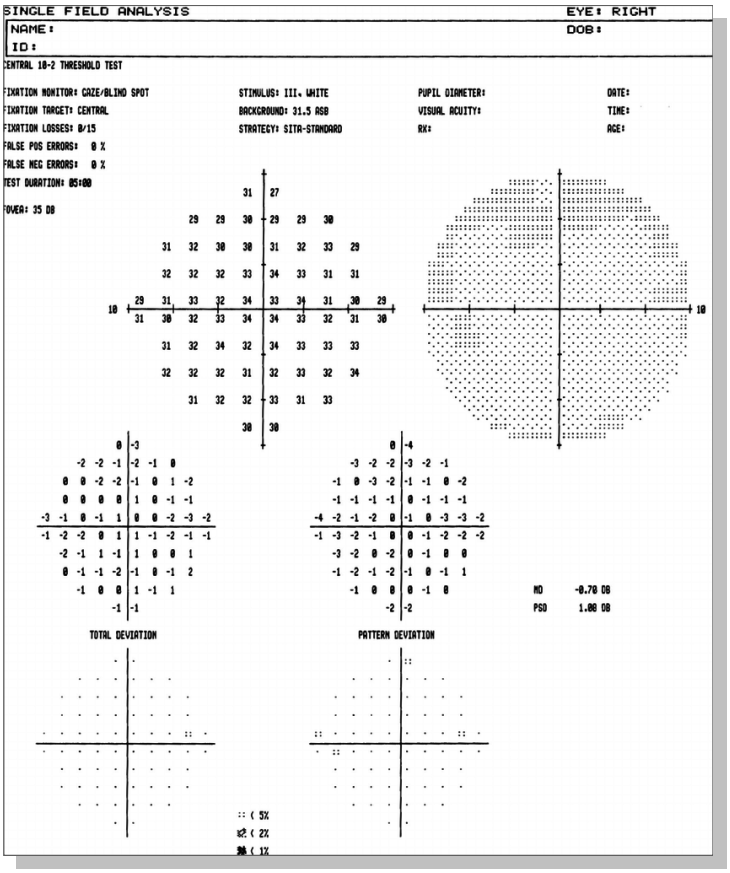
STEP 3: OBTAIN VISUAL SYSTEM IMPAIRMENT (VSI).

The process is relatively straightforward once the Functional Acuity Score (Step 1) and Functional Field Score (Step 2) are obtained. In accordance with the "Basic Rule" found on page 304, the MIR Physician multiplies the FAS by the FFS and divides the product by 100 to obtain the Functional Vision Score (FVS). Since the FVS is an ability score, not inability, the MIR Physician subtracts the FVS from 100 to obtain the Visual System Impairment.

FVS = (FAS x FFS)/100 VSI = 100-FVS

STEP 4: OBTAIN WHOLE PERSON IMPAIRMENT (WPI).

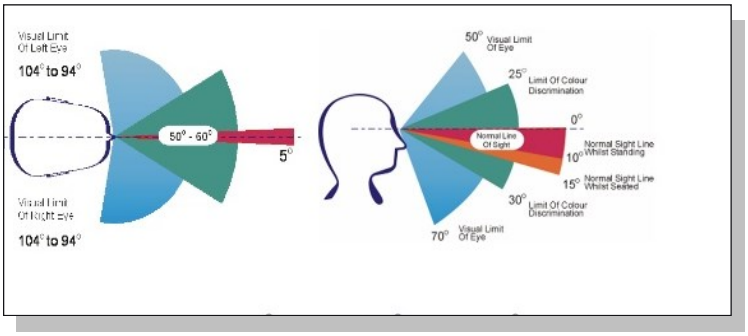
All MIR Reports convert regional and system impairments to whole person impairments. To convert visual system impairment to whole person impairment, the MIR Physician follows the conversion rule on page 306: if the VSI is less than or equal to 50%, then WPI = VSI; if the VSI is more than 50%, then WPI = 50 + 0.7 (VSI – 50). This rule is demonstrated graphically in Figure 12-8 on page 307.



Humphreys Field Analyzer Test results in gray scale.
http://www.oculist.net/downaton502/prof/ebook/duanes/pages/v8/v8c109.html

OTHER CONSIDERATIONS

Since standardized measurement analysis is not yet available for other aspects of visual impairment such as contrast sensitivity, photophobia, color vision defects, stereopsis, and diplopia, the 6th edition of the *Guides* does not provide a detailed methodology for considering them. Instead it allows for the MIR Physician to increase the VSI up to 15 points for "significant factors that affect functional vision



Measuring degrees from center (0°) of the Field of Vision
http://www.slideshare.net/marknb00/comp-4010-lecture3-human-perception

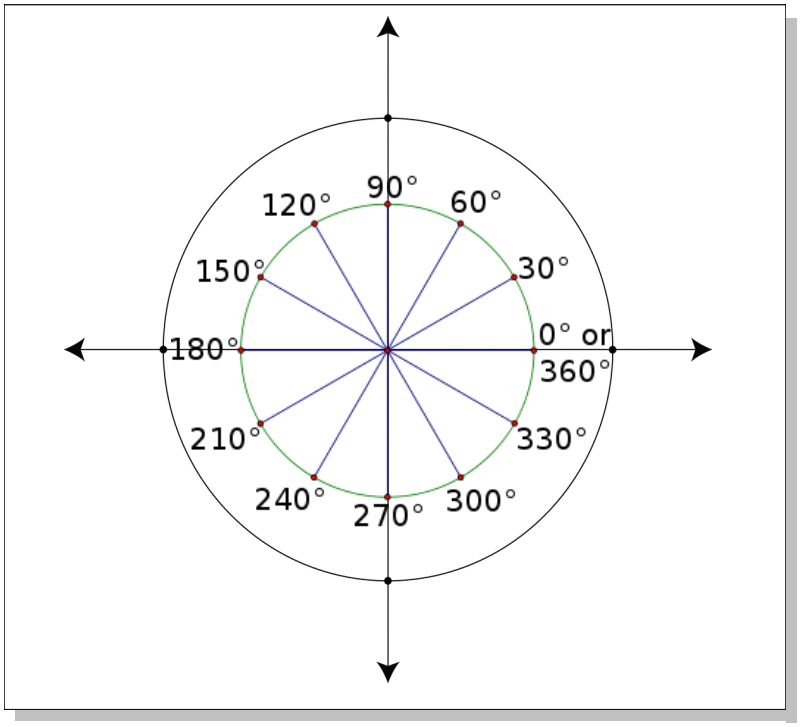
VISUAL SYSTEM IMPAIRMENTS

(Continued from page 6)

that are not accounted for through visual acuity or visual field loss."[1 (305)] The MIR Physician should note benchmarks provided in the second column of page 305 for guidance regarding these additional impairment points. In any event, rating additions should be considered only in the rare circumstance that the deficit is not already incorporated in the visual acuity and field losses, and the need must be strongly supported in the MIR Report.

CONCLUSION

Visual system impairment ratings are based primarily on objective and precise measurements of the examinee's visual acuity and visual field. To rate the visual system for MIR Reports, the MIR Physician should obtain the FVS by dividing the product of the functional acuity and field scores by 100. This quotient is then subtracted from 100 to produce the VSI. Finally, the VSI is converted to WPI according to the rule on page 306. MIR Physicians may increase the VSI up to 15 percentage points in the rare event that a visual deficit is not included in the functional acuity or functional field scores. While ophthalmologists are the preferred arbiters of visual system MIR disputes, family and occupational MIR Physicians may do so as well, provided they have thorough training and access to appropriate charts and perimeters.



Measuring meridian degrees from 0° for the quadrant testing grid in Figure 12-1, page 295.
https://en.wikibooks.org/wiki/High_School_Trigonometry/Radian_Measure

MIR PHYSICIAN SPOTLIGHT

GALEN R. SMITH, MD

(Continued from page 2)

great honor for me. In August of 2010, I completed my tour of duty and was discharged from the Army. After my service, I returned to being a citizen."

"Well we were shocked," says Dr. Strang. "In retrospect, it shouldn't have surprised us because of his sense of dedication and duty. But he had a wife. He had children. He runs a mini-farm. He had an arthritic knee and hip, but yet he was willing to sign up and serve his county in his mid-fifties."

With the help of his wife, Katherine, and twin teenage sons, Eric and Kyle, Dr. Smith enjoys the rural life, raising a few cattle and goats on the family farm during the off hours and on the weekend. The Smiths also have a large vegetable garden that provides "a lot of good food each summer."

In 2011 Dr. Smith won the "Servant's Heart Award," Mountain States Health Alliance's most prestigious recognition "created to honor team members, physicians, and volunteers who model the philosophy of patient-centered care." The award is given to worthy recipients, as recognized by their peers, for exemplifying the meaning of "bringing loving care to health care."

"I admire Dr. Smith because he speaks to patients in terms that they understand," says Darla Taylor, Director of Preoperative Services at IPMC. "So many times in healthcare we use our own language. You can see just an instant bond. Patients and their families respect him for that extra mile that he always goes."

MSHA's Servant's Heart Award is peer recognition given to the team member, physician, or volunteer who exemplifies patient-centered care.