**COMPLICATIONS OF DIABETES**

Instructor Lesson Plan

Time Required: 6 Hours

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| Lesson Description |
| The information below provides the instructor with an overview of the lesson and the materials that are required to effectively present this instruction. |
| TMS # | 1209942 |
| Prerequisites | Prior to this lesson, the Rating Veteran Service Representatives (RVSRs) should have completed RVSR Challenge.  |
| target audience | The target audience for Complications of Diabetes is RVSR (Post Challenge).Although this lesson is targeted to teach the RVSR employee, it may be taught to other VA personnel as mandatory or refresher type training. |
| Time Required | 6 hours |
| Materials/TRAINING AIDS | Lesson materials:* Complications of Diabetes PowerPoint Presentation
* Complications of Diabetes Trainee Handouts
* Complications of Diabetes Answer Key
 |
| Training Area/Tools  | The following are required to ensure the trainees are able to meet the lesson objectives: * Classroom or private area suitable for participatory discussions
* Seating, writing materials, and writing surfaces for trainee note taking and participation
* Handouts, which include a practical exercise
* Large writing surface (easel pad, chalkboard, dry erase board, overhead projector, etc.) with appropriate writing materials
* Computer with PowerPoint software to present the lesson material

Trainees require access to the following tools: * VA TMS to complete the assessment
 |
| Pre-Planning  | * Become familiar with all training materials by reading the Instructor Lesson Plan while simultaneously reviewing the corresponding PowerPoint slides. This will provide you the opportunity to see the connection between the Lesson Plan and the slides, which will allow for a more structured presentation during the training session.
* Become familiar with the content of the trainee handouts and their association to the Lesson Plan.
* Practice is the best guarantee of providing a quality presentation. At a minimum, do a complete walkthrough of the presentation to practice coordination between this Lesson Plan, the trainee handouts, and the PowerPoint slides and ensure your timing is on track with the length of the lesson.
* Ensure that there are copies of all handouts before the training session.
* When required, reserve the training room.
* Arrange for equipment such as flip charts, an overhead projector, and any other equipment (as needed).
* Talk to people in your office who are most familiar with this topic to collect experiences that you can include as examples in the lesson.
* This lesson plan belongs to you. Feel free to highlight headings, key phrases, or other information to help the instruction flow smoothly. Feel free to add any notes or information that you need in the margins.
 |
| Training Day  | * Arrive as early as possible to ensure access to the facility and computers.
* Become familiar with the location of restrooms and other facilities that the trainees will require.
* Test the computer and projector to ensure they are working properly.
* Before class begins, open the PowerPoint presentation to the first slide. This will help to ensure the presentation is functioning properly.
* Make sure that a whiteboard or flip chart and the associated markers are available.
* The instructor completes a roll call attendance sheet or provides a sign-in sheet to the students. The attendance records are forwarded to the Regional Office Training Managers.
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| Introduction to Rating Chronic Complications of Diabetes |
| INSTRUCTOR INTRODUCTION | Complete the following:* Introduce yourself
* Orient learners to the facilities
* Ensure that all learners have the required handouts
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| time required | 0.5 hours |
| Purpose of LessonExplain the following: | This lesson is intended to provide an overview of medical information and rating guidelines associated with chronic complications of Diabetes Mellitus.This lesson will contain discussions and exercises that will allow you to gain a better understanding of: * general rating considerations
* microvascular complications
* macrovascular complications
* diabetes complications, not otherwise specified (NOS)
* Special Monthly Compensation
 |
| Lesson ObjectivesDiscuss the following:Slide 2 Handout 2 | In order to accomplish the purpose of this lesson, the RVSR will be required to accomplish the following lesson objectives.TheRVSRwill be able to: * review rating complications of diabetes under Diagnostic Code (DC) 7913
* define the term “microvascular”
* list the three microvascular disabilities that are associated with diabetes mellitus
* define the term “macrovascular”
* list the four macrovascular disabilities that are associated with diabetes mellitus
* list five complications of diabetes mellitus that are not specifically associated with the microvascular or macrovascular disease process
* describe the symptoms of each disability, tests that are performed to diagnose/evaluate them, and
* state types of Special Monthly Compensation considerations with complication of diabetes
 |
| Explain the following: | Each learning objective is covered in the associated topic. At the conclusion of the lesson, the learning objectives will be reviewed.  |
| Motivation | Veterans may not be aware that chronic complications of service-connected disabilities may also have service connection established. Inferred issues are those that are not specifically raised by the claimant, but are derived from the consideration or outcome of a related issue. Since inferred issues must be placed at issue by the RVSR (or VSR), claims processors must be aware of the chronic complications of diabetes mellitus, so they can process claims accurately, and ensure Veterans receive all of the benefits to which they are entitled. |
| STAR Error code(s) | These error codes are likely to be seen in incorrectly rated diabetes complications cases: A1) Were all claimed issues addressed and decided?; A2) Were all unclaimed subordinate and/or ancillary issues addressed?; C1) Was the grant or denial of all issues correct?; C2) Was the percentage evaluation assigned correct (including combined eval.)? |
| ReferencesSlide 3 & 4 Handout 2 | Explain where these references are located. (All M21-1 references are found in the [Live Manual Website](https://vaww.compensation.pension.km.va.gov/)).* [38 CFR 3.307 Presumptive service connection for chronic, tropical or prisoner-of-war related disease, or disease associated with exposure to certain herbicide agents; wartime and service on or after January 1, 1947](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?portalid=554400000001034)
* [38 CFR 3.309 Disease subject to presumptive service connection](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?portalid=554400000001034)
* [38 CFR 4.26 Bilateral factor](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_26.htm)
* [38 CFR 4.71a Schedule of Ratings-Musculoskeletal System](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_71a.htmhttp%3A/vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_71a.htm)
* [39 CFR 4.79 Schedule of Ratings—Eye](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_79.htm)
* [38 CFR 4.87 Schedule of Ratings - Ear](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_87.htm)
* [4.104 Schedule of Ratings—Cardiovascular system](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_104.htm)
* [38 CFR 4.114 Schedule of Ratings—Digestive System](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_114.htm)
* [38 CFR 4.115a Ratings of the genitourinary system-dysfunctions](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_115a.htm)
* [38 CFR 4.115b Ratings of the genitourinary system-diagnoses](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_115b.htm)
* [38 CFR 4.116 Schedule of ratings-gynecological conditions and disorders of the breast](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_116.htm)
* [38 CFR 4.118 Schedule of ratings-skin](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_118.htm)
* [38 CFR 4.119 Schedule of ratings-endocrine system](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_119.htm)
* [38 CFR 4.124a Schedule of ratings-neurological conditions and convulsive disorders](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_124a.htm)
* [38 CFR 4.130 Schedule of ratings-mental disorders](http://vbaw.vba.va.gov/bl/21/publicat/Regs/Part4/4_130.htm)
* [M21-1, Part III. Subpart iv.4.B - Conditions of the Organs of Special Sense](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/)
* [M21-1, Part III. Subpart iv.4.E - Cardiovascular System Conditions](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?portalid=554400000001034)
* [M21-1, Part III. Subpart iv.4.F - Endocrine Conditions](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?portalid=554400000001034)
* [M21-1, Part III.Subpart iv.4.G.4.b – Guidance on Evaluating Completely Sensory Peripheral Nerve Impairment](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/#!agent/portal/554400000001034/article/554400000014200/M21-1-Part-III-Subpart-iv-Chapter-4)
* [III.iv.4.I.3.s.  Limits on Separate Evaluation of Nephropathy and Hypertension](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/)
* [M21-1, Part III. Subpart iv.6.B.3 - Qualifying Disabilities Under 38 CFR 3.383](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?portalid=554400000001034)
* [M21-1, Part IV. Subpart ii.2.H - Special Monthly Compensation (SMC)](https://vaww.compensation.pension.km.va.gov/system/templates/selfservice/va_ka/portal.html?portalid=554400000001034)
 |
| Topic 1: General Rating Considerations |
| Introduction | This topic will allow the trainee to understand general considerations related to rating complications of diabetes. |
| Time Required | 1 hour |
| OBJECTIVES/Teaching Points | Topic objectives:* review considerations for rating diabetic complications under diagnostic code 7913
 |
| DC7913*Provide information to the students on what is considered to be a worsening. Also review the diabetes rating criteria DC7913.*Slides 5 - 6Handout 3 - 4Discuss the listing of known DM complications Slides 7 - 8Handout 3 - 4  | The chronic complications of diabetes can affect many different parts of the body, most commonly the eyes, heart, feet, nervous system, and kidneys. On average, complications become evident about 15-20 years after the diagnosis of diabetes mellitus. However, some people never develop complications, and others develop them much earlier, and even have them at the time of diagnosis. About 40% will develop complications at some time.The diagnosed complications of diabetes establish a worsening of the disability; therefore, the effective date rules of increased compensation apply, whether the evaluation of diabetes is increased or complications of diabetes are separately established as service connected.Evaluate compensable complications of diabetes separately, unless they are a part of the criteria used to support a 100 evaluation. Non- compensable complications are considered part of the diabetic process under diagnostic code (DC) 7913. If the Veteran has non-compensable complications of diabetes mellitus but does not have ketoacidosis or hypoglycemic reactions, do not evaluate the diabetes mellitus at 60 percent simply because non-compensable complications are present.Instead, assign an evaluation based on the evidence of record. If there is a requirement for insulin, restricted diet, and regulation of activities and include the non-compensable complications under DC 7913, assign a 40 percent evaluation.***Note****: The preceding information is provided to make RVSRs aware of some common complications that may be related to diabetes, but does not provide authority to automatically grant them. Some complications, like diabetic retinopathy or diabetic nephropathy, won’t need a medical opinion because their association to diabetes is already established by the diagnosis, but others (like glaucoma, PVD, stroke, skin infections, etc.) are not exclusive to diabetics, and therefore, will require an opinion to determine if there is a causal relationship. It is important to note the course of diabetes (the date it was first diagnosed, treatment and control) and the date complications first arose when requesting a medical opinion.*The diagnosed complications of diabetes establish a worsening of the disability; therefore, the effective date rules of increased compensation apply, whether the evaluation of diabetes is increased or the complications of diabetes are separately established as service connected.Known complications of Diabetes Mellitus* Retinopathy, Cataracts, Glaucoma
* Nephropathy
* Hypertension
* Stroke
* Heart problems
* Peripheral vascular disease
* Neuropathy
* Sexual dysfunction
* Other Infections
 |
| Topic 2: Microvascular Complications |
| **Introduction** | This topic will allow the trainee to understand the common microvascular complications associated with diabetes |
| **Time Required** | 1.25 hours |
| **OBJECTIVES/Teaching Points** | Topic objectives:* define the term “microvascular”
* list the three microvascular disabilities that are associated with diabetes mellitus
* describe the symptoms of each disability, tests that are performed to diagnose/evaluate them, and discuss any special rating considerations that may apply

The following topic teaching points support the topic objectives: * Eye problems
* Nerve damage
* Kidney disease
 |
| *Refer to Handout**Definition**Slide 9Handout 4**Eye Problems**Slides 10**Handout 4 - 6**Nerve Damage**Slides 11 - 12**Handout 6 - 7**Levels of impairment (mild, moderate, severe)**Kidney Disease**Slide 13**Handout 7- 8****Note****: III.iv.4.I.3.i, do not use elevated BUN between 20 and 40 mg to support finding of definite decrease in kidney function for assignment of 60% evaluation for renal disability as BUN can vary based on many factors.* | Direct trainees to the Handout. Point out that, microvascular disease is a process through which the very small branches of arteries throughout the body become damaged. It is a common component of diabetes mellitus“Microvascular” is defined as: pertaining to the small blood vessels in the body, including the capillaries.The three primary complications of diabetes that are attributed to microvascular disease are:1. retinopathy (eye),
2. neuropathy (nerves),
3. nephropathy (kidneys).

Tell trainees that diabetic eye disease is commonly associated with poor control of blood glucose and/or blood pressure. Most eye complications are due to blood vessel damage from high blood sugars. They may result in leaking (hemorrhage) from damage to capillaries or partial to total blood vessel blockage, due to decreased blood supply.The most common microvascular eye complication is diabetic retinopathy, but there are two other eye diseases that are also commonly related to diabetes. They are:* cataracts, which is thickening or clouding of the lens of the eye; and
* glaucoma, a build-up of pressure within the eye.

Background diabetic retinopathy (BDR) is an early stage of damage that can be seen by ophthalmoscopic examination and diagnosed before vision is impaired.Describe the symptoms of retinopathy to trainees. They are:* blurry or double vision,
* rings, flashing lights or blank spots,
* dark or floating spots,
* pain or pressure in one or both eyes, and
* trouble seeing things out of the corners of the eyes.

There are two main categories of diabetic retinopathy: background or simple retinopathy, (BDR) and proliferative retinopathy. Eye changes, such as intraretinal microvascular abnormalities and cotton wool spots, are often accepted as a third category called preproliferative diabetic retinopathy.Characteristics of background diabetic retinopathy are: microaneurysms, hemorrhages, and hard exudates. Advise trainees that about 80% of people who have had diabetes for over 20 years have some background diabetic retinopathy (BDR), but 75-80% of those never develop serious vision problems. However, BDR can progress to macular edema or proliferative retinopathy.Proliferative retinopathy causes neovascularization, a condition where new vessels, which are very prone to bleeding, grow into the vitreous gel (the clear jelly-like substance that fills the middle of the eyeball). If extensive or repeated bleeding occurs, fibrous tissue or scarring can form near the retina, causing retinal detachment.There are a variety of types of cataracts, but the most common type, senile cataracts, often start as a discoloration of the lens, with loss of vision occurring as this localized structural damage enlarges to form a distinct opacity. Due to high blood sugar, diabetes raises the risk for senile cataract by about 40 percent.Symptoms of cataracts are:* clouded, blurred or dim vision,
* increasing difficulty with vision at night,
* sensitivity to light and glare,
* double vision of a single eye,
* fading or yellowing of colors, and
* halos around lights.

Sugar cataracts are found only in diabetics and can occur at any age, but often strike young adults who are in very poor control of their Type I diabetes. They grow rapidly and can cause complete loss of vision in the affected eye in as little as 3 days.Tell trainees that glaucoma is pressure build-up of the fluid inside the eye. As the pressure increases, it can compress the optic nerve and the blood vessels that nourish the retina and cause a slow loss of peripheral vision and eventual blindness.Primary, open-angle glaucoma typically causes gradual loss of peripheral vision, usually in both eyes, with tunnel vision occurring in the advanced stages. Diabetics are 1.4 to 2 times more likely to develop open-angle glaucoma than non-diabeticsNote these common tests conducted to evaluate eye complications:* pupillary dilation test – expands pupil to examine retina for signs of disease
* refraction test – measures ability to see objects at specific distances
* tonometry – measures intraocular pressure
* slit-lamp exam – looks at the front of the eye by shining a beam of light shaped like a small slit on the eye

Advise trainees that only optometrists and ophthalmologists may conduct C&P eye examinations and, when there are abnormal findings, *a diagnosis is required*. Examinations of visual fields or muscle function are needed only when medically indicated (or when specially requested, such as on a BVA remand).Eye diseases are rated either by a level of activity or upon chronic residuals, as reflected by impairment of vision. This can be:* impairment of central visual acuity – how well one sees objects with each eye, whether near or far;
* impairment of field of vision – how large a visual area one can see with each eye, or
* impairment of muscle function – how well the eye muscles function to permit binocular vision.

Some eye disabilities result in more than one type of impairment. If there is disease or injury to the optic nerve, such as with glaucoma, be sure that field of vision measurements are included in the exam report. Automated perimetry or an equivalent kinetic method are both acceptable ways to measure visual fields, but all results must be recorded on a standard Goldmann chart and included withthe examination report.Explain that diabetic neuropathy is a group of disturbances that occur frequently in diabetics that can affect many parts of the nervous system. The cause of diabetic neuropathy is unknown, but may be due to a disturbance of nerve metabolism or ischemia (inadequate blood supply) of the nerves.There are three categories of diabetic neuropathy:* distal symmetric/diffuse polyneuropathy (peripheral neuropathy),
* focal neuropathies, and
* autonomic neuropathy

Distal symmetric/diffuse polyneuropathy (peripheral neuropathy) is primarily sensory. It affects nerves in the upper and lower extremities. It is progressive, but usually develops slowly. It always starts distally and moves proximally and is most commonly found in a “stocking- glove” distribution.People with peripheral neuropathy have reduced sensitivity to light touch or temperature, so they are susceptible to injuries or burns. They often experience weakness and loss of balance, or incoordination.Diabetics who have peripheral neuropathy are at increased risk for developing Charcot’s joints, which is degenerative disease, characterized by instability and fragmentation of bones.Focal, mononeuropathy is also referred to as asymmetrical neuropathy. It is less common than polyneuropathy and involves a single, isolated nerve. affect specific nerves in the head, torso, or legs. It appears suddenly, but usually gets better over time.Radiculopathy is neuropathy of a spinal nerve root, which produces pain over one or more spinal nerves, usually on the chest wall or abdomen.It also causes sensory loss, and like mononeuropathy, the lesion is normally self-limited.Advise trainees that, as a complication of diabetes, compression neuropathies (carpal tunnel syndrome) may also occur.Autonomic neuropathy affects the sympathetic and parasympathetic nerves that control involuntary functions in the body (such as blood pressure, heart rate, digestion, salivation, and urination). It can have broad effects on the cardiovascular, digestive, and genitourinary systems, and on the sweat glands.Typically, physicians assess neurological function by evaluating deep tendon reflexes, muscle strength, and sensations of: temperature, light touch, sharp and dull pressure, and vibration.When more in-depth testing is required, they may request electromyogram (EMG), which measures the electrical activity of muscles at rest and during contraction and/or nerve conduction velocity testing (NCV) that measures how quickly electrical impulses move along a nerve.Tell trainees that, when rating diseases of the nerves, they must apply diagnostic criteria that are based on some combination of symptoms and a focused neurological examination. *Reinforce that nerve conduction studies and special quantitative sensory tests are invasive and not routinely done during a C&P examination*.**Discuss**: in June 2016, an update to the Live Manual (38 CFR 4.124a Guidance on Evaluating Completely Sensory Peripheral Nerve Impairment) clarified considerations for rating a peripheral neuropathy condition mild, moderate or severe. In cases where a peripheral nerve disability is only manifested by sensory impairment, [38 CFR 4.124](http://www.ecfr.gov/cgi-bin/text-idx?SID=c57cdeff39f8794ce53822404bf19c6c&mc=true&node=se38.1.4_1124a&rgn=div8)a directs decision makers to assign the evaluation corresponding with the mild ***or at most*** the moderate degree of impairment. To make a choice between mild and moderate, consider the evidence of record and the following guidelines:* The mild level of evaluation would be more reasonably assigned when sensory symptoms are
* recurrent but not continuous
* assigned a lower medical grade reflecting less impairment
* and/or affecting a smaller area in the nerve distribution.
* Reserve the moderate level of evaluation for the most significant and disabling cases of sensory-only involvement. These are cases where the sensory symptoms are
* continuous
* assigned a higher medical grade reflecting greater impairment
* and/or affecting a larger area in the nerve distribution.

***Important***: This provision ***does not*** mean that if there is *any* impairment that is non-sensory (or involves a non-sensory component) such as a reflex abnormality, weakness or muscle atrophy, the disability must be evaluated as greater than moderate. Significant and widespread sensory impairment may potentially indicate the same or even more disability than a case involving a minimally reduced or increased reflex or minimally reduced strength. ***This is followed by III.iv.4.G.4.c. Assigning Level of Incomplete Paralysis, Neuritis or Neuralgia which also has very good information on when to use the different levels of nerve evaluation. Refer students to this resource.*** Diabetic nephropathy is deterioration of the kidneys due to diabetes. It is the leading cause of kidney failure, occurring in 30-50% of insulin- dependent diabetics and 10-15% of non-insulin-dependent diabetics. Make trainees aware of a clinical syndrome in which diabetics have albuminuria, hypertension, background retinopathy and a history of diabetes for more than 10 years. If more than one of these is complications is present, they should look for others when reviewing treatment records.Diabetic nephropathy have five stages:1. silent stage – gradually damaged nephrons,
2. microalbuminuria – albumin, a type of protein in the urine, in the range of 30-300 mg/24 h;
3. clinical albuminuria or proteinuria – diabetes for 5+ yrs and clinically apparent albuminuria (>300 mg per 24 hrs) w/no other cause of kidney disease,
4. renal insufficiency – rising blood creatinine 2 mg/dL or greater,
5. end-stage renal disease (ESRD) – may require hemodialysis or kidney transplant.

Tests to detect kidney (renal) disease are:* creatinine – a waste product, from the normal breakdown of muscle. It builds up in the blood when the kidneys are damaged and unable to remove it from blood and excrete it. Normal levels vary, but a common normal range is 0.6 to 1.2 mg/dl. One estimate of renal function is that a creatinine level of 2.0 mg/dl means there is only 50% of normal renal function remaining and 4.0 mg/dl means 25% of normal function remains
* creatinine clearance test – indicates how fast creatinine is removed from the blood. The normal creatinine clearance rate in men is 97 to 137 ml/min. and in women is 88 to 128 ml/min
* blood urea nitrogen (BUN) – a waste product of protein that builds up in the blood when the kidneys are damaged and unable to remove it from the blood. Normal is 7 to 20 mg./dL. of blood. It is less specific for renal disease than creatinine because it can be elevated in dehydration and heart failure
* proteinuria – protein in the urine that occurs when damaged kidneys fail to separate the protein from the waste products
* renal imaging – ultrasound, computed tomography (CAT scan), and magnetic resonance imaging (MRI), mainly to find tumors or urinary tract obstruction
* renal biopsy – a surgical procedure in which a sample of kidney tissue is obtained for miscroscopic examination
* renal angiogram – an x-ray study of blood vessels that lead to the kidney

Advise trainees that hemodialysis or kidney transplant may be needed in late stages. Tell them that patients with diabetes tend to start dialysis earlier and at a lower creatinine level than others because they develop symptoms sooner than non-diabetics.Note that, even in the incipient stage, diabetic nephropathy is associated with renal hypertension, which is the most common cause of the hypertension that results from diabetes nephropathy. It is manifested by:* persistent microalbuminuria, which is characterized by urinary excretion of 150-500 mg of protein/24 hours, and
* overt proteinuria, which is characterized by urinary excretion of greater than 0.5 mg protein/24 hours
 |
| Topic 3: Macrovascular Complications |
| **Introduction** | This topic will allow the trainee to understand the common macrovascular complications associated with diabetes |
| **Time Required** | 1.25 hours |
| **OBJECTIVES/Teaching Points** | Topic objectives:* define the term “macrovascular”
* list the three macrovascular disabilities that are associated with diabetes mellitus
* describe the symptoms of each disability, tests that are performed to diagnose/evaluate them, and discuss any special rating considerations that may apply

The following topic teaching points support the topic objectives: * Heart
* Hypertension
* Stroke
* Peripheral Vascular Disease
 |
| ***Refer to Handout*****Definition***Slide 14Handout 8* | Diabetic macrovascular complications are conditions or diseases that affect the large blood vessels in the body. Macrovascular disease causes a narrowing in the vessels, resulting in reduced blood flow, and eventually damage to the area(s) affected. This can occur in blood vessels that are in any part of the body, but the four most common chronic complications are:* heart disease,
* hypertension,
* stroke, and
* peripheral vascular disease (PVD)
 |
| **Heart disease***Slide 15Handout 8***Hypertension***Slide 16- 18Handout 9****Stroke****Slide 19Handout 9****Peripheral Vacular*** ***Disease****Slide 20**Handout 10* | Arteriosclerotic heart disease, also known as coronary artery disease (CAD), is a build-up of plaque on the walls of the arteries. It is a major cause of death among diabetics. When arteries narrow, or clog up completely, blood flow to the heart can slow down or stop, causing chest pain (stable angina) or heart attack. Angina and myocardial infarction (MI) may be silent until they result in unexpected left heart failure.A heart attack, also known as myocardial infarction (MI), is an acute event characterized by discomfort, pressure, fullness, squeezing or pain in the center of the chest. Sometimes, the pain travels or spreads to the shoulders, neck or arms. These symptoms are caused by a blockage in the blood vessels supplying the heart. If blood flow is not restored within 20 to 40 minutes, irreversible death of the heart muscle will occur. The muscle continues to die for six to eight hours, at which time, the heart attack usually is “complete.” Dead heart muscle is replaced by scar tissue.Tests commonly performed to diagnose heart disease are:* metabolic equivalent of task (METS) – determines if there are abnormalities in the heart’s electrical activity by measuring the metabolic rate on cardiac stress test
* ejection fraction – measures the fraction of blood pumped out of the left ventricle with each heart beat
* electrocardiogram (ECG) – checks for problems with the electrical activity of the heart
* computed tomography (CT scan) of the heart – visualizes the heart’s anatomy; Calcium-score heart scan and coronary CT angiography are just a few types used to diagnose heart disease
* cardiac catheterization – (also called a coronary angiogram) insertion of a catheter into the heart muscle to evaluate functioning

Inform trainees that more than half of all people with diabetes also suffer from hypertension, or high blood pressure. The diseases occur together so frequently that they are often considered to be “comorbidities” (diseases likely to be present in the same patient).Explain that, people with diabetes and hypertension share certain physiological traits, such as increased fluid volume, increased arterial stiffness and impaired insulin handling.Hypertension is classified as either primary (essential) hypertension or secondary hypertension. Most hypertension that develops in diabetics is essential hypertension that is not due to diabetes. However, hypertension may be a complication of diabetes under certain circumstances. Diabetic nephropathy, even in its incipient stage, may be associated with renal hypertension and is the most common cause of hypertension that results from diabetes. Renovascular hypertension results from stenosis, or arrowing, of one or both renal arteries and is responsible for less than two percent of all cases of hypertension.Advise trainees that “normal” blood pressure for those with diabetes and/or chronic kidney disease is <130/80 mmHg. When left untreated, the long-term stress of high blood pressure levels increases the risk of other diabetic complications such as stroke, coronary artery disease (CAD), diabetic retinopathy, and nephropathy (kidney disease).In most cases of mild or even moderate hypertension, there are no symptoms, but people with extremely elevated blood pressure may experience:* headaches,
* vision problems,
* abdominal or chest pain,
* shortness of breath, and
* dizziness or nausea.

Tell trainees that, in order to obtain an accurate blood pressure reading, the patient should avoid caffeine, exercise, or smoking for at least 30 minutes and rest quietly for at least 5 minutes beforehand.Blood pressure is measured with a cuff device called a sphygmomanometer. Results reported (i.e.; 130 over 80) are the systolic and diastolic pressure readings, respectively. The systolic reading represents blood pressure as the heart beats, while the diastolic reading is the pressure between beats.After an initial high reading, one or more measurements should be done outside the doctor's office to distinguish between sustained and white- coat hypertension (high blood pressure due to nervousness or anxiety in a clinical setting). A diagnosis of hypertension requires multiple high readings, because blood pressure varies throughout the day.RVSRs should infer the issue of service connection for hypertension as secondary to diabetes mellitus whenever service connection is established for diabetes mellitus and diabetic nephropathy, and the Veteran has a diagnosis of hypertension. Point out that, when hypertension and diabetic nephropathy are both present, it is important to know when each disability was first diagnosed**.*****Straight out of the Live Manual Update August 17, 2016…******Do not*** assign separate evaluations for * renal dysfunction associated with nephropathy under [38 CFR 4.115b](http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=e656283abfbcfef7856e3ce703f35604&mc=true&r=SECTION&n=se38.1.4_1115a), and
* hypertension under [38 CFR 4.104, DC 7101](http://www.ecfr.gov/cgi-bin/text-idx?SID=b352f7981bdad004bde72edb147df394&mc=true&node=se38.1.4_1104&rgn=div8).

***Exception***: A separate evaluation for any hypertension is appropriate when* nephropathy requires regular dialysis, or
* absence of a kidney is the sole renal disability -- even if removal was required because of nephropathy.

***Explanation***: * There is a close interrelationship between hypertension and nephropathy. Therefore assignment of separate evaluations for hypertension and for renal dysfunction associated with nephropathy violates pyramiding principles under [38 CFR 4.14](http://www.ecfr.gov/cgi-bin/text-idx?SID=b352f7981bdad004bde72edb147df394&mc=true&node=se38.1.4_114&rgn=div8) ***even if*** the renal dysfunction evaluation appears supportable by criteria other than systolic and diastolic blood pressure (such as definite decrease in kidney function at the 60 percent level or, transient or slight edema at the 30 percent level).
* However the exception above applies because there is no pyramiding of evaluations when the renal rating is for absence of a kidney or for the requirement of regular dialysis.

State that, brain tissue requires a steady supply of oxygen and nutrients to keep nerve cells and other parts of the tissue alive and functioning. The brain depends on a network of blood vessels to supply it with blood that is rich in oxygen.A stroke, also known as cerebrovascular accident (CVA), is an acute event that occurs when one of these blood vessels becomes damaged or blocked, preventing blood from reaching an area of the brain. When that part of the brain is cut off from its supply of oxygen for more than three to four minutes, it begins to die. Note that there are two types of strokes:* Those that are caused by a rupture in an artery, also known as hemorrhagic stroke, and
* Strokes which are caused by blockage or occlusion of an artery, known as ischemic stroke.

Symptoms of stroke frequently begin with little warning, and may include:* mental confusion and disorientation,
* sudden dizziness and/or loss of balance,
* difficulty talking or walking,
* visual disturbance,
* severe headache and weakness or numbness in the face, arm, or leg (typically on one side of the body).

Prompt treatment is crucial as early treatment can minimize damage.Diagnosing stroke usually begins with a healthcare professional asking questions concerning what happened and when the possible stroke symptoms began. He or she will review the patient's medical history and conduct a physical exam (including a short neurological exam). Tests used for diagnosing stroke may include: blood tests, ct scan, mri, carotid doppler ultrasound, and cerebral angiography.Inform RVSRs that, although strokes are typically rated in the neurological system, sometimes they present with symptoms in the genitourinary, digestive, and respiratory systems. Therefore, it is important to review all service connected disabilities and their associated symptoms before rating residuals of stroke, to avoid pyramiding. ***It is also important to consider SMC if the stroke results in loss of use of an extremity, need for aid and attendance, etc.*** Note that the term “peripheral vascular disease” (PVD) refers to diseases of the blood vessels (arteries and veins) located outside the heart and brain. While there are many causes of peripheral vascular disease, doctors commonly use the term synonymously with peripheral arterial disease (PAD), a condition that develops when the arteries that supply blood to the internal organs, arms, and legs become completely or partially blocked as a result of atherosclerosis.Symptoms of PVD may include:* claudication – pain, weakness, numbness, or cramping in muscles due to decreased blood flow
* sores, wounds or ulcers that heal slowly or not at all
* noticeable change in color (blueness or paleness) or temperature (coolness) when compared to the other limb
* diminished hair and nail growth on affected limb and digits

Doctors test for PVD by conducting an ankle-brachial index (ABI) test, which compares the blood pressure in the ankle with blood pressure in the arm, while a person is at rest. The doctor will also use a stethoscope to listen to the sound of blood going through the arteries. A noise, called a bruit, may be a warning to the doctor that there is narrowing in the artery.A normal resting ankle-brachial index is 1 or 1.1 blood pressure at the ankle is the same or greater than the pressure at the arm; no significant narrowing or blockage of blood flow.A resting ankle-brachial index <1 is abnormal. If the abi is less than 0.95, significant narrowing of one or more blood vessels in the legs is indicated and if it is less than 0.8, pain in the foot, leg, or buttock may occur during exercise. When the abi is less than 0.4, symptoms may occur when at rest and at 0.25 or below.Peripheral vascular disease may also be diagnosed by a doppler ultrasound test that uses reflected sound waves to evaluate blood as it flows through a blood vessel. A doppler study also measures the blood pressure in the legs before and after exercise. Sometimes, magnetic resonance angiography is performed to identify whether there are arterial plaque deposits present.Remind trainees that, peripheral vascular disease is typically rated under diagnostic code (dc) 7114, arteriosclerosis obliterans and the evaluations shown in the rating schedule are for involvement of a single extremity. If more than one extremity is affected, they must evaluate each separately and combine (38 CFR 4.25), using the bilateral factor (38 CFR 4.26), when applicable. |
| Topic 4: Diabetes Complications, Not Otherwise Specified (NOS) |
| **Introduction** | This topic will allow the trainee to identify complications of diabetes mellitus that are not specifically associated with the microvascular or macrovascular disease process |
| **Time Required** | 1.5 hours |
| **OBJECTIVES/Teaching Points** | Topic objectives:* list five complications of diabetes mellitus that are not specifically associated with the microvascular or macrovascular disease process, and
* describe the symptoms of each disability, tests that are performed to diagnose/evaluate them, and discuss any special rating considerations that may apply.
* state types of Special Monthly Compensation considerations with complication of diabetes

The following topic teaching points support the topic objectives: * foot problems
* infections
* skin diseases
* sexual dysfunction
* pregnancy complications
 |
| *Slide 21**Handout 11****Foot Problems****Slide 22Handout 11****Slide 23****THE SLIDE PROVIDES ADDITIONAL THINGS TO CONSIDER IF AMPUTATION BECOMES AN ISSUE****Infections****Slide 24 – 25 Handout 12****Skin Diseases****Handout 12**Briefly discuss a few “Other Rare infections”****Sexual Dysfunction****Slide 26* *Handout 12 - 13****Pregnancy Complications****Slide 27**Handout 13 - 14****Special considerations****Slide 28**Handout 14**Special Monthly Compensation* | About 40% of diabetics will develop complications at some point in the disease process, especially if it is not well controlled. In addition to the microvascular and macrovascular disease processes, other frequent complications are:* foot problems,
* infections,
* skin diseases
* sexual dysfunction, and
* pregnancy complications.

Inform trainees that foot complications are the most frequent reason for hospitalization in patients with diabetes, accounting for up to 25 percent of all diabetic admissions in the United States. Diabetes can lead to a variety of foot problems, including:* **neuropathy** – the lessened ability to feel pain, heat and cold
* **skin changes** – nerves that control oil and moisture in the foot no longer work causing calluses and foot ulcers
* **poor circulation** – the lessened ability to fight infection and heal
* **amputation** – anatomical loss of the foot (or both feet) from gangrene due to unhealed injuries or infection

*Reinforce that, neuropathy, a microvascular complication of diabetes (also discussed in Part I), is characterized by:** decrease or no sweating (i.e. dry scaly skin with callus formation)
* numbness, tingling, and some sort of burning sensation
* weakness and loss of reflexes
* decreased sensation to changes in temperature

Foot deformities, which are common in diabetic patients, lead to focal areas of high pressure that can cause skin changes, such as:* **calluses** – a skin build-up that occurs on high pressure areas under the foot, or
* **ulcers** – a skin breakdown that usually develops on the ball of the foot or the bottom of the big toe and can range from a surface wound, to a deep infection

Because diabetes affects the body's ability to fight infections, a foot ulcer, once it forms, easily becomes infected. If neuropathy is also present, a person may not feel discomfort from the infection until it becomes serious and difficult to treat. Gangrene is caused by reduced blood flow to the feet and unhealed injuries or infectionReiterate that, when poor circulation is present as a macrovascular complication of diabetes (as discussed in Part II), the symptoms are:* changes in color or texture of skin and hair distribution,
* pitting edema, and
* temperature differences between feet.

People with diabetes are more than 15 times more likely to require amputation of a foot or leg than are people without diabetes. Peripheral neuropathy, peripheral vascular disease, and infection are all contributory causes. Amputation of one lower extremity predisposes to amputation of the other because of increased stress on the opposite leg, resulting in ulcers, infection, etc.During a foot exam, a healthcare provider performs:* **visual inspection of**:
* **feet** – examine shape for physical deformity, and
* **footwear** – examine wear pattern for problems with weight bearing and staining for evidence of injury or skin disease.
* **vascular** – a history, for claudication, and assessment of the pedal pulses with palpation and ankle-brachial index (ABI)
* **neurological**
* **monofilamen**t – a very thin, flexible thread that is used to determine if a patient can sense pressure in various areas of the foot.
* **light touch** – a tuning fork is used to determine if a patient can sense vibration in various areas, especially the foot and toe joints.
* **dermatologic** – skin turgor/texture is assessed for integrity, especially between the toes and under the metatarsal heads (presence of erythema, warmth, or callus formation may indicate areas of tissue damage with impending breakdown)
* **musculoskeletal** – ranges of motion (ROM)

When an unhealed injury or foot infection that is a complication of service connected diabetes results in amputation, remember to grant SMC K for anatomical loss of a foot. If one amputation occurs above the knee, or both feet must be amputated above the ankles, be sure to consider service connection for any subsequent ischemic heart disease or hypertension on a secondary basis.Tell trainees that, people with diabetes often develop bacterial and fungal infections, typically of the skin. When the levels of sugar in the blood are high, white blood cells cannot effectively fight infections.Any infection that develops tends to be more severe and, since all of the body's fluids have higher levels of sugar and nutrients, they are more inviting for bacteria to grow and multiply.The most common types of infections are:* bacterial infections
* fungal infections
* Candidiasis Albicans

Diabetics frequently develop bacterial skin infections, including: styes, boils, carbuncles, and cellulitis.* **Styes** – infections of the glands of the eyelid. A person with a stye usually experiences pain, redness, swelling, itching, and watery eyes, with sensitivity to light. Eye discomfort is often enhanced by blinking.
* **Boils** – infections of the hair follicles that normally appear as tender, warm, or dead skin tissue and pus-filled sacs.
* **Carbuncles** – skin infections that are slightly larger than boils and don’t develop around hair follicles, but they share the same properties
* **Cellulitis** – an inflammatory process caused by bacterial infection of the dermis and underlying subcutaneous tissues of the skin, due to altered immune response. It usually begins as a small area of tenderness, swelling and redness of the skin. As the red area enlarges, the skin appears tight and glossy. An infected person may develop a fever, malaise, and swollen lymph nodes near the site.

**State that another type of bacterial infection that afflicts diabetics is a urinary tract infection (UTI**) . This is an infection in the organs and tubes that process and carry urine out of the body. Most UTIs are either bladder infections (cystitis) or kidney infections (pyelonephritis) .UTIs occur when bacteria begin to grow in the kidneys, the bladder, the tubes that carry urine from the kidneys to the bladder (ureters), or the tube that carries urine from the bladder to outside of the body (urethra).A person suffering from UTI may have a frequent urge to urinate and experience a painful, burning feeling in the area of the bladder or urethra during urination. Urine may be bloody, cloudy, or foul- smelling.High glucose levels in the blood can enhance the growth of fungi and skin is the flourishing site for it.* Common types of dermatophytosis include:
* tinea pedis (athlete’s foot),
* tinea cruris (jock itch),
* tinea corporis (ringworm), and
* tinea capitis (ringworm on the scalp).

Tinea infections of the skin may cause temporary hair loss at the site of infection, ring-like raised itchy patches, blisters or scabs.Most fungal infections found in people with diabetes are due to:Candida Albicans – a normal inhabitant in the throat, mouth, genitourinary tract and intestine. It is an opportunistic type of yeast that may become pathogenic because of a disturbance in the balance of normal flora, which may shift from yeast to invading mycelial fungal form.Oral candidiasis is called thrush. Thick, white lacy patches on top of a red base can form on the tongue, palate, or elsewhere inside the mouth. These patches sometimes look like milk curds. If they are wiped away with a blade or cotton-tipped applicator, the underlying tissue may bleed. This infection also may make the tongue look red without the white coating. Thrush can be very painful.Diabetic women are prone to develop vaginal yeast infections and, in fact, the frequency of infection may be the first sign that a woman is diabetic. Symptoms of vaginal yeast infections may include itching, burning, and irritation of the vagina. Painful urination and/or intercourse are common. Abnormal vaginal discharge is not always present and may be minimal. The discharge is typically described as cottage-cheese-like in nature although it may vary from watery to thick in consistency.Diabetic men can develop penile Candidiasis, but it is quite rare and usually occurs as a result of contact with a female sexual partner who has a yeast infection.The most common type of Candidiasis infection first appears as a white or yellowish patch in the nail bed and then spreads outward. The skin surrounding the nail may also become red, swollen, itchy, and give off a foul smell. Left untreated, the nail may become discolored, deformed, or thickened and become mycotic. The fungus often causes the nail to thicken and separate from the underlying nail bed.Tell trainees that there are some other, rare infections, which appear to have a specific relationship to diabetes. They are:* **Malignant external otitis** – an uncommon, but serious, Pseudomonas infection of the external ear canal. The infection is thought to begin as cellulitis of the ear canal, but natural cleavage planes allow progression through the osseous cartilaginous junction. Sometimes, the cranial nerves become involved, especially the facial nerve. About half of the affected individuals die from this infection.
* **Nasopharyngeal mucormycosis** – a rare, aggressive, opportunistic infection caused by fungi in the class of phycomycetes that often follows an episode of diabetic ketoacidosis. It typically originates in the nasal or oral mucosa, spreads to the paranasal sinuses and enters the orbit via the ethmoid and maxillary sinuses or via the nasolacrimal duct, causing the nasal mucosa and underlying tissues become black and necrotic. Serious neurologic complications may occur and, if left untreated, death usually occurs in a week to 10 days.
* **Emphysematous cholecystitis** – an acute infection of the gallbladder wall, caused by gas-forming organisms. Vascular insufficiency is a root cause of the infection that most commonly presents in older males, and diabetics.
* **Emphysematous pyelonephritis** – an acute, fulminant, necrotizing infection of kidney and perirenal tissues associated with gas formation. which may be life-threatening. In the vast majority of the cases, the infecting organism is E. coli. Diabetics and other immunocompromised people are predisposed to this infection.

Poor circulation to the skin can lead to ulcers and infections and causes wounds to heal slowly. People with diabetes are particularly likely to have ulcers and infections of the feet and legs. Too often, these wounds heal slowly or not at all, and amputation of the foot or part of the leg may be needed.In addition to infections and ulcers, there are several specific skin conditions that may affect diabetics.* **Necrobiosis lipoidica diabeticorum** - plaque-like yellow to brown lesions over the anterior tibial surfaces of the legs that may ulcerate. It develops over months and may last years. The cause is unknown.
* **Diabetic dermopathy ("shin spots")** - small plaques with a raised border, also usually over the anterior tibial surfaces that may also ulcerate. Cause is unknown.
* **Bullosis diabeticorum** – blisters spontaneously appearing on the hands or feet, heal in 2-5 weeks, sometimes with scarring and atrophy.

At the site of insulin injections, fatty tissue may atrophy, or the skin may thicken with an accumulation of fat resembling a lipoma.Skin tests may be performed to diagnose bacterial or fungal skin infections. The most common tests are:* **patch testing** – allergens are applied to the skin with adhesive patches and left for a period of time. The skin is then examined for any reaction.
* **skin biopsy** – the removal of skin for laboratory analysis. The sample of skin may be removed with a scalpel or a cylindrical punch, after local anesthesia. Skin biopsies are performed to diagnose skin cancer or benign skin disorders.
* **culture** – skin, hair, or nails may be cultured to detect bacteria, fungi, or viruses.
* **nail clipping/skin scraping test** – microscopic evaluation of skin lesions or nail clippings

Diagnostic tests for urinary tract infection include:* **clean catch urine sample** – washing the genital area and collecting a "midstream" sample of urine in a sterile container
* **intravenous pyelogram** – (for frequent/recurrent infections) opaque dye visible on x-ray film is injected into a vein, and a series of x rays is taken of the bladder, kidneys, and ureters

Note that both men and women with diabetes can develop sexual problems due to damaged nerves and small blood vessels. The nerves that control the internal organs are called autonomic nerves. They signal the body to perform routine functions (digest food and circulate blood), without a person having to think about it. The body’s response to sexual stimuli is involuntary, governed by autonomic nerve signals that increase blood flow to the genitals and cause smooth muscle tissue to relax. Damage to the autonomic nerves can hinder normal functioning and is often referred to as sexual neuropathy. Reduced blood flow, resulting from damaged blood vessels, may also contribute to sexual dysfunction.Regardless of gender, some additional reasons for sexual dysfunction are the side effects of medications taken to control diabetes and psychological factors (depression/anxiety) from coping with the effects of chronic disease.In *men*, symptoms of sexual dysfunction include:* **impotence/erectile dysfunction** – a consistent inability to have an erection firm enough for sexual intercourse
* **retrograde ejaculation** – a condition in which part or all of a man’s semen goes into the bladder instead of out the tip of the penis during ejaculation.

Retrograde ejaculation occurs when internal muscles, called sphincters, do not function normally. A sphincter automatically opens or closes a passage in the body. With retrograde ejaculation, semen enters the bladder, mixes with urine, and leaves the body during urination without harming the bladder.* **loss of libido** – absence of sexual urges

In *women*, symptoms of sexual problems may include:* **vaginal dryness** – decreased vaginal lubrication
* **dyspareuni**a – uncomfortable or painful sexual intercourse
* **anorgasmy** – the inability to become or remain aroused or reach climax
* **loss of libido** – decreased or no desire for sexual activity

A physical exam and laboratory tests may help pinpoint causes of sexual problems. The health care provider may order urinalysis, check blood glucose control, conduct a thyroid profile and consider serum hormone levels (testosterone/estrogen). Additional tests for males include penile blood pressure and a nocturnal tumescent study that checks for erections occurring during sleep. The health care provider may also ask the patient about recent changes in his or her life, to screen for psychological symptoms.Award *SMC K* to a diabetic male Veteran, when the medical evidence of record shows a condition of the reproductive tract which results in loss of use of a creative organ, such as retrograde ejaculation or spermatozoa dumping into the bladder in a male Veteran, or the loss of erectile powerInform trainees that pre-eclampsia is pregnancy-induced hypertension (PIH), plus proteinuria. It occurs in otherwise healthy women after the twentieth week of pregnancy and is more likely to be found in diabetic women and/or those who are overweightBabies of diabetic mothers have a tendency to be large (macrosomia) because fetal hyperglycemia stimulates production of insulin, growth hormones and the deposition of fat and glycogen. Other pregnancy- related complications for the mother include birth injuries and Cesarean birth.Symptoms of pre-eclampsia are:* dizziness/headache
* visual disturbance
* abdominal pain
* facial edema
* poor appetite, nausea , and vomiting

Severe preeclampsia affects the mother's blood system, kidneys, brain, and other organs. If convulsions occur with PIH, it is called eclampsia. In very rare cases, the woman can die.PIH disappears within a few weeks after birth, but when complications occur, any resulting permanent damage may be attributed to the woman’s diabetic condition.No one test will diagnose pre-eclampsia, but normally, the following factors are considered:* elevated blood pressure (greater than 140/90 on more than 2 occasions, at least six hours apart)
* higher than normal liver enzymes (thrombocytopenia)
* protein in the urine (proteinuria)
* platelet count < 100,000
* weight gain of more than 2 lbs per week, or sudden weight gain over 1-2 days.

Most pregnancy complications are self-limiting and will resolve without residuals after delivery. However, maternal birth injuries and all permanent complications of pregnancy will be rated on residuals.Remind trainees:* to evaluate compensable complications of diabetes separately unless they are a part of the criteria used to support a 100 percent evaluation,
* non-compensable complications are considered part of the diabetic process under diagnostic code (DC) 7913.

Also,* if a Veteran has noncompensable complications of diabetes mellitus but does not have ketoacidosis or hypoglycemic reactions, they should not evaluate the diabetes mellitus at 60 percent simply because noncompensable complications are present.
* Instead, they should assign a 40 percent evaluation if there is a requirement of insulin, restricted diet, and regulation of activities and include the noncompensable complications under DC 7913

Special Monthly Compensation* Loss of use
* Anatomical loss
* Need for aid and attendance
* Housebound (In-fact/Statutory)
* Automobile Allowance
* Specially Adapted Housing/Special Home Adaptation
* Chapter 35
 |
|  |  |
| Exercise | Lesson PPT Review |
| note(s) | Review PPT is available at instructors discretionsas time allows |
| DEMONSTRATION | PPT |
| Practical Exercise |
| Time Required | 0.25 hours |
| EXERCISE*Handout 15 - 16* | Answer questions found in exercise located at end of Student Handout; answers are located in answer key document.Ask if there are any questions about the information presented in the exercise, and then proceed to the Review. |
| Lesson Review, Assessment, and Wrap-up |
| IntroductionDiscuss the following: | The Rating chronic complications of diabetes lesson is complete. Review each lesson objective and ask the trainees for any questions or comments. |
| Time Required | 0.25 hours  |
| Lesson Objectives | You have completed the Complications of Diabetes lesson. The trainee should be able to: * review rating complications of diabetes under Diagnostic Code (DC) 7913
* define the term “microvascular”
* list the three microvascular disabilities that are associated with diabetes mellitus
* define the term “macrovascular”
* list the four macrovascular disabilities that are associated with diabetes mellitus
* list five complications of diabetes mellitus that are not specifically associated with the microvascular or macrovascular disease process
* describe the symptoms of each disability, tests that are performed to diagnose/evaluate them, and
* state types of Special Monthly Compensation considerations with complication of diabetes
 |
| Assessment  | Remind the trainees to complete the on-line assessment in TMS to receive credit for completion of the course.The assessment will allow the participants to demonstrate their understanding of the information presented in this lesson. |