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Script for
“Diabetes Self-Care: An Action Plan to Reduce Complications”
Client: Jeff Ensminger (dba “Propel Health”)
Version 1.0 – Section 5 - Medications

Scene	Audio	Video
Medications		
<p>5A.1</p>	<p>VO:</p> <p>In this chapter, we’ll look at several types of oral medications used by people with diabetes. We’ll review their effects, including side effects that might be experienced by users. You don’t need to view information about all of the oral medications unless you want to. Instead, you can select the medication that’s of particular interest to you.</p> <p>We’ll also discuss insulin, in its various forms, and methods for administering it.</p> <p>Finally, we’ll take a look at some other medications to help control blood glucose. Since new medications and insulin products are being developed all the time, you should visit our web site, www.propelhealth.com, to get the most up-to-date information.</p> <p>There is a quiz for this chapter at the end of the section on “Other medications”. If you are planning to take the quiz, you should view the first two topics from the menu below before viewing “Other medications.”</p> <p>Also, there is a glossary of terms used in this DVD. To access this glossary, go to the Main Menu, select “Additional Resources” and then select “Glossary”.</p>	<p>Background graphic of an oral medication. Superimpose graphic:</p> <p>Oral Medications</p> <p>Insulin</p> <p>Other Medications</p> <p>URL of web site</p> <p>Show person selecting “Take Quiz” on DVD and the quiz appearing</p> <p>Show Main Menu, selection of “Additional Resources” and highlight “Glossary”</p>

Sub-menu: ➤ Oral medications (go to 5B, then sub-menu) ➤ Insulin (go to 5C) ➤ Other medications (go to 5D) ➤ Medications Quiz		
5B - Oral Medications		
5B.1	<p>VO: Generally speaking, medications work on three problems of metabolism in people with diabetes:</p> <ul style="list-style-type: none"> ➤ Insufficient insulin because the pancreas is unable to produce a sufficient amount; ➤ Insulin resistance, where the peripheral membranes (or “walls”) of cells in the body do not utilize insulin effectively; and ➤ A condition called “gluconeogenesis” where the liver is releasing an excess amount of glucose. <p>All of these problems are dangerous if not properly controlled. Let’s take a look at several types of commonly used oral medications. You may select a medication from the following menu in order to learn more about it.</p>	<p>Video of person injecting medication/insulin; freeze video and superimpose graphics:</p> <p>Medications may address:</p> <ul style="list-style-type: none"> • Insufficient insulin • Insulin resistance • Gluconeogenesis (excess glucose)
<p>Oral medication sub-menu:</p> <ul style="list-style-type: none"> ➤ Sulfonylurea (e.g., Glucotrol, Amaryl) – go to 5B.2 ➤ Meglitinides (e.g., Prandin, Starlix) – go to 5B.3 ➤ Biguanides (e.g., Glucophage, Glucovance ???) – go to 5B.4 ➤ Thiazolidinedione (e.g., Actos, Avandia) – go to 5B.5 		
5B.2a	<p>VO: Sulfonylurea is perhaps the oldest type of oral medication. The current form is considered a “second generation” of the medication because it is</p>	<p>Show one or two brands of sulfonylurea; superimpose graphics: Either a graphic showing action of medication</p>

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	<p>an improved version of the original. It works by stimulating beta cell release of insulin. [JEFF: DO YOU NEED TO EXPLAIN “BETA CELL” HERE?] In other words, it doesn’t “make” more insulin, it simply boosts the beta cells’ ability to release insulin.</p> <p>This group of medications includes glyburide (previously marketed under the brand names DiaBeta, Micronase and Glynase) [JEFF: NOT SURE WHAT “PREVIOUSLY” REFERS TO. WHAT IS THIS MEDICATION CURRENTLY SOLD AS?]; glipizide (sold under the brand name Glucotrol), and glimiperide (sold under the brand name Amaryl).</p>	<p>on beta cell insulin release or text graphic</p> <p>Show packages of each medication as mentioned</p>
<p>5B.2b</p>	<p>VO: These medications are available in various dosages:</p> <ul style="list-style-type: none"> ➤ Glyburide, or ???, comes in 2.5 and 5 mg doses; the maximum dosage is 20 mg ➤ Glipizie, or Glucotrol comes in 5 and 10 mg doses; it also comes in an extended release form known as Glucotrol XL ➤ Glimiperide, or Amaryl, comes in 1, 2 and 4 mg doses 	<p>Show package of each med as mentioned, superimpose dosage info</p>
<p>5B.2c</p>	<p>VO: These medications should be taken 30 minutes before meals. They may be expected to produce a 60-70 point reduction in glucose levels, depending on your eating and activity regimen. Generally, these medications are effective up to ten years. [JEFF: DO WE WANT TO SAY WHY THEY ARE NO LONGER EFFECTIVE AFTER 10 YEARS?] Possible side effects of sulfonylurea medications include: hypoglycemia; headaches; nausea; diarrhea; and sun sensitivity. Consumption of alcohol while taking this type of medication will increase your risk of hypoglycemia. Also, this medication may cause weight gain.</p>	<p>Show person taking a medication; freeze, superimpose graphic:</p> <ul style="list-style-type: none"> • Take 30 minutes before meals • 60-70 point reduction in glucose • Effective up to 10 years <p>Possible side effects of sulfonylurea:</p> <ul style="list-style-type: none"> • Hypoglycemia (increased with alcohol consumption) • Headaches • Nausea • Diarrhea

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		<ul style="list-style-type: none"> • Sun sensitivity • Weight gain
5B.3a	<p>VO: Meglitinides include Repaglinide (sold under the brand name, Prandin) and Nateglinide (sold under the brand name, Starlix). Like sulfonylurea medications, meglitinides work by stimulating the beta cells to release more insulin. However, meglitinides have a shorter duration of actions in the body, reducing the likelihood of hypoglycemia hours after taking the medication.</p>	<p>Show one or two brands of meglitinides; superimpose graphics:</p> <ul style="list-style-type: none"> • Stimulate beta cells to release more insulin • Shorter duration than sulfonylurea – reduced risk of hypoglycemia
5B.3b	<p>VO: These medications are available in various dosages:</p> <ul style="list-style-type: none"> ➤ Repaglinide, or Prandin, comes in 0.5, 1 and 2 mg tablets ➤ Nateglinide, or Starlix, is available in 60 or 120 mg tablets 	<p>Show package of each med as mentioned, superimpose dosage info</p>
5B.3c	<p>VO: These medications should be taken 15 minutes before eating, but never taken if you're not eating.</p>	<p>Show person taking a medication; freeze, superimpose graphic:</p> <ul style="list-style-type: none"> • Take 15 minutes before meals • Don't take if not eating
5B.3d	<p>VO: Possible side effects of meglitinide medications include: hypoglycemia; headaches; nausea; diarrhea; and sun sensitivity. Consumption of alcohol while taking this type of medication will increase your risk of hypoglycemia. Also, this medication may cause weight gain.</p>	<p>(continue graphic) Possible side effects:</p> <ul style="list-style-type: none"> • Hypoglycemia (increased risk with alcohol consumption) • Headaches • Nausea • Diarrhea • Sun sensitivity
5B.4a	<p>VO: Biguanides include metformin, sold under the brand name of Glucophage, which works by suppressing the production of glucose by the liver and</p>	<p>Show image of Glucophage package; superimpose graphic:</p> <ul style="list-style-type: none"> • Suppresses production of glucose

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	improving glucose uptake in the peripheral cells. It enables the body to use its natural insulin more effectively.	<ul style="list-style-type: none"> • Improves glucose uptake in peripheral cells • Better use of natural insulin
5B.4b	<p>VO: Glucophage is available in doses of 500, 850 and 1,000 mg. It also comes in an extended release form, called Glucophage XR, and part of Glucovance [JEFF: DO WE NEED TO EXPLAIN GLUCOVANCE?]</p> <p>This medication should be taken with food.</p>	(continue graphic) <ul style="list-style-type: none"> • Doses: 500, 800, 1,000 mg • Extended release form(Glucophage XR) • Take with food
5B.4c	<p>VO: Glucophage may be expected to produce a 60-70 point decrease in glucose levels, depending on your eating and activity habits. This effect should occur within two weeks of starting the medication. It may also help with weight loss as patients often experience a decrease in hunger. Furthermore, Glucophage may cause a decrease in LDL, or “bad” cholesterol levels.</p>	(continue graphic) <ul style="list-style-type: none"> • 60-70 point decrease in glucose • May decrease hunger • May decrease LDL (“bad” cholesterol)
5B.4d	<p>VO: Possible side effects of Glucophage include: diarrhea and nausea, which are common initially – especially if the initial dose is higher than 500 mg. For this reason, it’s recommended that patients start gradually and work their way up to the recommended dose gradually – over a period of days or weeks. Other side effects include: a metallic taste; flatulence; headaches; abdominal discomfort; lactic acidosis; muscle pain; and weakness.</p>	(continue graphic) <ul style="list-style-type: none"> • Possible side effects <ul style="list-style-type: none"> ○ Diarrhea ○ Nausea ○ Metallic taste ○ Flatulence ○ Headaches ○ Abdominal discomfort ○ Lactic acidosis ○ Muscle pain ○ Weakness
5C - Insulin		
5C.1	VO:	Video of person preparing to take insulin

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	<p>Insulin has been called “the gold standard” of care for people with diabetes. The amount of insulin you take can be adjusted, based on your blood glucose levels and the amount of carbohydrates you’re eating – unlike oral medications which have a fixed dose and thus provide less flexibility.</p>	
5C.2	<p>VO: Unless you’re currently using insulin, your perception about it might be out-of-date. There have been many improvements in insulin over the years and it’s significantly better than what your grandparents might have used. For example, insulin pens have eliminated the need to “draw up” insulin from a vial into a syringe; and the needles are very small today. In fact, almost everyone who starts insulin finds it surprisingly easy to adjust to the routine of daily injections.</p> <p>Now, let’s look at some of the types of insulin currently in use.</p>	<p>(continue video of person preparing to take insulin)</p> <p>show insulin pens</p> <p>person injecting insulin</p>
5C.3	<p>VO: Rapid-acting insulin, such as Novolog and Humalog, has an onset time of about 15 minutes. This means it takes about 15 minutes to reach the blood and start reducing glucose levels. It reaches its peak effect between one and two hours and its duration – or, the total length of time it’s effective – is between three and five hours.</p> <p>Rapid-acting insulin is used to control glucose levels at meals and/or when glucose levels are excessively high and need to be reduced quickly. This type of insulin should NOT be taken if a person is not eating and their glucose levels are in control – that is, below 120 mg/dL.</p> <p>Rapid-acting insulin most closely resembles the release of insulin by the pancreas in people without diabetes. Also, it’s the only insulin used by insulin pumps – which we’ll discuss further in a few minutes.</p>	<p>Image of packages of Novolog and Humalog; superimpose graphics:</p> <p>Rapid-acting insulin</p> <ul style="list-style-type: none"> • Onset – 15 minutes • Peak effect – 1 to 2 hours • Duration – 3 to 5 hours • Do NOT take if not eating or glucose is under control
5C.4	<p>VO:</p>	<p>Image of package of “N” or “NPH” insulin;</p>

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	<p>Another form of insulin is called “Intermediate-acting insulin,” also known as “N” or “NPH” insulin. The onset of intermediate-acting insulin is two-to-four hours. Its peak effect is between four and ten hours, and its duration is twelve-to-twenty hours. The absorption of intermediate insulin into the blood can vary by 30% or more, often causing unexpected high or low glucose levels. Intermediate-acting insulin is considered a “background” or “basal” insulin, meaning it’s effective over a long period of time. Usually, it’s injected two times a day and it often comes pre-mixed with rapid-acting insulin. [JEFF: NEED EXPLANATION OF WHY THESE TWO ARE MIXED TOGETHER. e.g., TO PROVIDE BOTH IMMEDIATE AND LONGER-TERM CONTROL OF GLUCOSE LEVELS THROUGHOUT THE DAY]</p>	<p>superimpose graphic : Intermediate-acting insulin</p> <ul style="list-style-type: none"> ● Onset – 2 to 4 hours ● Peak effect – 4 to 10 hours ● Duration – 12 to 20 hours ● Absorption can vary by 30% or more ● Considered “background” or “basal” insulin
<p>5C.5</p>	<p>VO: Insulin glargine, also known by its brand name, “Lantus,” is similar to Intermediate-acting insulin in that it has a relatively slow onset – between two and four hours, and a long duration – between twenty and twenty-four hours. However, its considered superior to Intermediate-acting insulin because its absorption rate is less variable. In other words, its effect on blood glucose levels is more predictable than Intermediate-acting insulin.</p>	<p>Image of Lantus package; superimpose graphic: <u>Insulin glargine (“Lantus”)</u></p> <ul style="list-style-type: none"> ● Onset – 2-4 hours ● Duration – 20-24 hours ● Absorption rate is less variable
<p>5C.6</p>	<p>VO: Another form of insulin is called “premixed insulin.” It’s also known as “75/25” or “70/30” insulin. In the first type, which is made by Eli Lilly, the “75” denotes that the solution is 75% intermediate-acting insulin and 25% is rapid-acting insulin.</p> <p>In “70/30” insulin, which is made by NovoNordisk, the “70” denotes that the solution is 70% rapid-acting insulin and 30% is intermediate-acting insulin.</p> <p>These premixed forms typically are injected twice daily, at breakfast and dinner.</p>	<p>Image of packages of pre-mixed insulin (both brands), superimpose graphics: <u>Pre-mixed insulin</u></p> <ul style="list-style-type: none"> ● 75/25 (Eli Lilly) <ul style="list-style-type: none"> ● 75% intermediate-acting ● 25% rapid-acting ▪ 70/30 (NovoNordisk) <ul style="list-style-type: none"> ● 70% rapid-acting ● 30% intermediate acting

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<p>5C.7</p>	<p>VO: It's important to know that the best insulin regimen – that is the schedule for using insulin – varies from person to person, depending on one's lifestyle, ability to administer insulin, and their level of glucose control. For example, four injections a day is probably not suitable for an elderly person who lives alone. Whereas, two injections a day may not be suitable for a physically active individual who wants tight glucose control and less hypoglycemic reactions.</p>	<p>Show elderly person at home reading or watching television</p> <p>Show younger person running (or doing other exercise)</p>
<p>5C.8</p>	<p>VO: Although many people use a syringe to inject insulin, this requires a great deal of care in making sure the correct dose is drawn up into the syringe. Failure to do this carefully can lead to injecting too much or too little insulin. You should ask your diabetes educator, nurse or pharmacist to explain the correct procedures for injecting the right dose of insulin.</p> <p>Insulin pens have a pre-filled cartridge of insulin. This avoids the need to “draw up” insulin from a vial into a syringe. People using the pen need to “screw” on a pen needle and dial the correct dose. All types of insulin can be delivered by a pen.</p>	<p>Show person drawing up insulin into syringe</p> <p>Show person talking to pharmacist or diabetes educator</p> <p>Show a different person preparing to use insulin pen</p>
<p>5C.9</p>	<p>VO: Another device for administering insulin is the insulin pump. Unlike injections, the pump allows users to speed up, slow down, or stop insulin delivery with the touch of a few buttons. People using the pump have one injection of a “port” – usually every 2-3 days. Pumps only use rapid acting insulin, which is pumped into the body every few minutes. Pumps calculate the amount of insulin that's appropriate for each individual and administer the right amount at the right time to maintain control of blood glucose.</p> <p>Pumps have proven to reduce hypoglycemic reactions significantly, although users need to be properly trained and test their glucose levels 4-6</p>	<p>Show insulin pump</p> <p>Graphic showing how insulin pumps work</p> <p>Person with pump testing glucose level</p>

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	<p>times a day. Insulin pumps have improved the quality of life of thousands of people with diabetes.</p> <p>Pump manufacturers include Roche Diagnostics, Medtronic/Minimed and Smith Medical. The cost of a pump is approximately \$5,000 and the tubing and ports need to be changed every 2-3 days. These expenses are covered by most insurance carriers.</p>	<p>Show variety of pumps</p>
5C.10	<p>VO: There are two medications that can help with glucose control.</p> <p>The first is Byetta. This injectable medication is taken along with insulin and it helps improve glucose control and promotes weight loss.</p> <p>Byetta is injected with an insulin pen and should be taken within one hour of meals. Patients should start with a 5 mcg dose and increase to 10 mcg after one month.</p>	<p>Show Byetta package</p> <p>Show insulin pen with Byetta</p>
5C.11	<p>VO: Byetta has three effects that help with glucose control. Its primary effect is to replace first phase insulin response that becomes absent in Type 2 diabetics. [JEFF: DO WE NEED TO EXPLAIN “FIRST PHASE INSULIN RESPONSE”?]</p>	<p>Graphic: <u>Byetta</u></p> <ul style="list-style-type: none"> ➤ Replaces 1st phase insulin response
5C.12	<p>VO: The second effect of Byetta is that it suppresses the secretion of glucagons during times of hyperglycemia, which, in turn, reduces the secretion of glucose by the liver. [JEFF: DO WE NEED TO EXPLAIN “GLUCAGONS” HERE?]</p>	<p>(continue graphic)</p> <ul style="list-style-type: none"> ➤ Suppresses secretion of glucagons during hyperglycemia
5C.13	<p>VO: The third effect of Byetta is that it slows gastric emptying [JEFF: CAN WE USE ANY OTHER TERM HERE? Eg “SLOWS DIGESTION” or will people understand what this means?] which also improves glucose control and causes people to eat less because they feel “full” longer after</p>	<p>(continue graphic)</p> <ul style="list-style-type: none"> ➤ Slows gastric emptying

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	eating, leading to weight loss.	
5C.14	<p>VO: Byetta does increase the risk of hypoglycemia, so sulfonylureas and meglitinides may need to be reduced [JEFF: WILL PEOPLE KNOW WHAT THIS MEANS? SHOULD WE USE BRAND NAMES?] Also, contraceptives and antibiotics should be taken at least one hour prior to Byetta injection.</p>	<p>(continue graphic)</p> <ul style="list-style-type: none"> ➤ Increases risk of hypoglycemia ➤ Contraceptives & antibiotics should be taken one hour prior to Byetta
5C.15	<p>VO: Another medication is Symlin, which is for type 1 or type 2 diabetes who inject insulin for glucose control. It is a synthetic form of the hormone amylin, which is released along with insulin by normal functioning beta cells in a person without diabetes. However, in people with diabetes whose beta cells are either damaged or destroyed, the body doesn't release insulin or amylin in proper amounts to provide glucose control.</p>	<p>Show package of Symlin; superimpose graphic: <u>Symlin</u></p> <ul style="list-style-type: none"> ➤ Synthetic form of amylin
5C.16	<p>VO: Symlin has proven to reduce the amount of meal time insulin required to control postprandial [JEFF: ANY OTHER WORD WE CAN USE HERE? DON'T KNOW IF MOST PEOPLE WOULD KNOW WHAT THIS MEANS] glucose levels, reduce daily glucose fluctuations by suppressing excess glucagons secretion, and help people lose weight when compared to people injecting insulin alone.</p>	<p>(continue graphic)</p> <ul style="list-style-type: none"> ➤ Reduces amount of insulin required ➤ Reduces glucose fluctuations ➤ Helps with weight reduction
5C.17	<p>VO: Symlin should be injected at meals at the same time as rapid acting insulin and should NOT be mixed with insulin. Symlin is available in 5 ml. vials and injected by syringe. It's <i>not</i> available in an insulin pen device.</p> <p>For people with type 2 diabetes, utilizing insulin for glucose control, insulin should be reduced by 50% at meals and Symlin should be initiated with a dose of 60 ug. [JEFF: WHAT IS "ug" ? DO WE NEED TO EXPLAIN THIS?] The dose of Symlin should be increased to 120 ug after 3 to 7 days if there are no signs or symptoms of nausea. After</p>	<p>(continue graphic)</p> <ul style="list-style-type: none"> ➤ Injected at same time as rapid-acting insulin (show 5 ml vial) <p><u>Type 2 Diabetes: When starting Symlin</u></p> <ul style="list-style-type: none"> ➤ Reduce insulin by 50% at meals ➤ Initial dose of Symlin – 60ug ➤ Increase dose to 120ug after 3-7 days ➤ Resume normal insulin dose

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	achieving this dose level, patients should increase insulin for postprandial glucose control.	
5C.18	<p>VO: For people with type 1 diabetes, meal time insulin should be reduced by 50% and Symlin should be initiated at 15 ug, and gradually increased in 15 ug increments to a maintenance dose of 30 to 60 ug. Once this level is achieved, insulin levels should be adjusted to maintain proper glucose control.</p>	<p><u>Type 1 Diabetes: When starting Symlin</u></p> <ul style="list-style-type: none"> ➤ Reduce insulin by 50% at meals ➤ Initial dose of Symlin – 15ug ➤ Gradually increase dose to 30-60ug ➤ Resume normal insulin dose
5C.19	<p>VO: Much like insulin, Symlin increases the risk for severe hypoglycemia up to three hours after injection, so it’s important to monitor glucose levels frequently. Nausea is also a possible side effect.</p> <p>Symlin should be stored in the refrigerator and protected from light. Once opened, it can be kept for up to 28 days.</p>	<p>Graphic: <u>Symlin</u></p> <ul style="list-style-type: none"> ➤ Increases risk for severe hypoglycemia ➤ Important to monitor glucose levels frequently ➤ Nausea possible <p>Show package being put into refrigerator</p>
5C.20	<p>VO: This concludes this chapter on medications. Now, you may choose to take a test on the material covered in this chapter, or simply return to the menu for other Self-management topics.</p>	<p>Screen with choices:</p> <ul style="list-style-type: none"> ➤ Take test ➤ Return to Self-management Menu
Test #4		