SYSTEMIC MEDICATIONS
for psoriasis and psoriatic arthritis
including biologics and new oral treatments
Psoriasis is a noncontagious, genetic disease of the immune system that affects the skin and/or joints. Psoriasis in the United States affects approximately 7.5 million Americans. The most common form, plaque psoriasis, results in raised, red lesions covered by silvery white scales. Psoriasis can be limited to a few lesions or can involve much larger areas of skin.

Psoriasis is considered moderate when it affects 3 to 10 percent of the body. Less than 3 percent is considered mild. Psoriasis is considered severe when it covers more than 10 percent. For most people, the surface area of one hand, including palm, fingers and thumb, equals about 1 percent of the skin surface. However, the severity of psoriasis can be measured by how the disease affects a person’s quality of life. Psoriasis can have a serious impact even if it involves a small area, such as the palms of the hands or soles of the feet.

WHAT IS PSORIATIC ARTHRITIS?
Psoriatic arthritis is a chronic inflammatory disease of the joints and connective tissue. Up to 30 percent of people with psoriasis develop psoriatic arthritis. It is frequently diagnosed about 10 years after the onset of psoriasis, particularly in its milder forms. Psoriatic arthritis causes pain, stiffness and swelling in and around the joints. Prompt diagnosis and treatment can relieve pain and inflammation, and may also possibly help prevent progressive joint damage and loss of function. Without treatment, psoriatic arthritis can be disabling.
WHAT IS PSORIASIS?

Systemic medications are prescription drugs that affect the entire body. Most people who use them have moderate to severe psoriasis and/or psoriatic arthritis. Systemic medications are also used by people who are not responsive to or are unable to take topical medications or ultraviolet (UV) light treatment. These drugs are taken by mouth in liquid or pill form or given by injection. This booklet covers several kinds of systemic medications: traditional systemics, which are created by combining chemicals and have been used for many years, and biologics, a newer class of drugs that are made from human or animal proteins, and new oral treatments, which are targeted (small molecule medications).

TRADITIONAL SYSTEMICS

Cyclosporine
What is it and how does it work?
Cyclosporine is an immunosuppressive drug that was first used to help prevent organ rejection in organ transplant patients. In 1997, the U.S. Food and Drug Administration (FDA) approved Neoral (one brand name for cyclosporine) for treatment of psoriasis. It is used for adults with severe psoriasis and otherwise normal immune systems.

Cyclosporine suppresses the immune system and stops the activity of certain immune cells, which slows the growth of skin cells.
How is it used?
Cyclosporine is taken daily by mouth and is available as a capsule or a liquid. The liquid form must be diluted for use, preferably mixed with room temperature orange or apple juice (not grapefruit juice; see page 5 for more on drug interactions). It should be taken on a consistent daily schedule.

Cyclosporine can provide rapid relief from symptoms. People may see some improvement in symptoms after two weeks of treatment, particularly with larger doses. However, it may take three to four months to reach a complete level of control.

Extended use of cyclosporine by transplant patients is well-established. There is less certainty about its long-term use for treatment of psoriasis. The FDA recommends the drug not be used for longer than one year because of potential damage to kidneys. However, there are no specific guidelines for how long people should stay off cyclosporine if they stop and then resume treatment. Some doctors may prescribe the drug for more than one year, while others try to limit lifetime use of the drug to one year.

Who should not take cyclosporine?

- People whose immune systems are compromised (for example, anyone with lymphoma or HIV infection, or anyone receiving other immune-suppressing drugs)
- Patients with active, serious infections
- Women who are breastfeeding
What are the risks?
People previously treated with PUVA (ultraviolet light A plus the light-sensitizing drug psoralen), methotrexate or other immunosuppressive agents, ultraviolet light B (UVB), coal tar or radiation therapy have an increased risk of developing skin cancer when taking cyclosporine. Renal dysfunction, including kidney damage, is another potential risk and increases with length of time and amount of cyclosporine taken. This risk is further increased in people with existing kidney damage. Your health care provider will monitor your kidney function with blood tests before and during treatment with cyclosporine. It is possible to develop hypertension while on this medication, so blood pressure must be closely monitored.

People taking cyclosporine are also at increased risk of developing lymphomas and other cancers not related to the skin.

Vaccinations may be less effective while taking cyclosporine. Talk to your doctor if you plan to get any kind of vaccination.

In general, women are advised not to become
pregnant while taking cyclosporine. Your health care provider may recommend that you stop treatment if you do become pregnant while taking it.

What are the possible side effects?

- Decreased kidney function
- High blood pressure
- High cholesterol and especially high triglycerides (blood fats)
- Excessive hair growth
- Tingling or burning sensations in the arms or legs
- Skin sensitivity
- Increased growth of gum tissue, with swelling
- Flu-like symptoms
- Upset stomach
- Tiredness
- Muscle, bone or joint pain
- Neurologic symptoms including headache, tremor, etc.

Generally, these side effects go away with a lower dose or if the drug is stopped.
What are the potential drug interactions?

Your health care provider should always be aware of any medications, treatments or dietary supplements you are using. Many medications interact with cyclosporine, including certain antibiotics, anti-inflammatories, antifungals, gastrointestinal agents, calcium channel blockers and anticonvulsants.

Over-the-counter (OTC) medications such as aspirin and ibuprofen can also interact with cyclosporine. These interactions can affect the metabolism of the drug, causing you to have either too much or too little of the drug in your bloodstream.

Avoid drinking grapefruit juice or eating grapefruit while taking cyclosporine because it can increase the level of the drug in your bloodstream. Eating a potassium-rich diet while on cyclosporine can raise your potassium too much. Talk with your health care provider about the amount of potassium-rich foods such as bananas, tomatoes, raisins and carrots that is advisable for you while taking cyclosporine.

St. John’s wort, a popular dietary supplement used for treating depression, can reduce the blood level of cyclosporine in transplant patients. It is not clear if the dose of cyclosporine used in treating psoriasis would be affected by taking St. John’s wort. Talk with your health care provider if you are taking St. John’s wort.

Can cyclosporine be used along with other treatments?

You can use cyclosporine along with the topical vitamin D drugs, Dovonex and Vectical (generic names calcipotriene and calcitriol), as well as topical corticosteroids. All of these topical treatments are safe and effective for severe chronic plaque psoriasis. Once using a topical
along with cyclosporine leads to improvement, you may need a lower dose of cyclosporine. This lessens the risk of side effects.

Your health care provider may recommend alternating cyclosporine with other forms of treatment to manage psoriasis better. This is called rotational therapy.

Normally doctors do not prescribe cyclosporine for people using PUVA, UVB therapy, methotrexate or other immunosuppressive agents. Cyclosporine can increase the skin’s sensitivity to the sun, so protect your skin while in the sun.

**Methotrexate**

**What is it and how does it work?**

Methotrexate is in a class of medications known as antimetabolites. It was initially used to treat cancer. Methotrexate was found to be effective in clearing psoriasis in the 1950s and was approved for this use by the FDA in the 1970s. It is usually sold as a generic. The doses administered for cancer are considerably higher than those given for psoriasis and psoriatic arthritis.

Methotrexate is prescribed for adults with severe psoriasis or adults with psoriatic arthritis.

Methotrexate acts by suppressing the immune system and thereby stopping the inflammatory response that can lead to psoriasis and psoriatic flares. Controlled studies have not unequivocally proven the efficacy of methotrexate to treat psoriatic arthritis.

**How is it used?**

Methotrexate is taken once a week, either by mouth or by injection. It is usually taken orally,
either in pill or liquid form. The liquid form may be mixed with fruit juice. It can be taken in a single dose or in three doses taken at 12-hour intervals over a period of 24 hours.

Sometimes a test dose of methotrexate is given first to see if a person tolerates the drug. If it is tolerated, the dosage is increased gradually to achieve clearance. Once the skin is clear, the dose may be gradually reduced to the lowest level capable of maintaining reasonable improvement. However, some may not taper off the medication if it is effective and well tolerated. If a few stubborn lesions remain, a doctor will usually not increase the dose of methotrexate. Instead, another treatment, such as a topical, may be added to clear remaining lesions. Improvement from methotrexate usually begins within three to six weeks of starting the drug. It may take up to six months to achieve the highest degree of improvement.

Who should not take methotrexate?

- People with alcoholism, alcoholic liver disease or other chronic liver diseases such as cirrhosis and hepatitis B and C
- People with immunodeficiency syndromes
- Pregnant or nursing women
- Women (or their male partners) planning a pregnancy
- People with active peptic ulcers
- People with significant liver or kidney abnormalities
- People with an active infectious disease
What are the risks?
The main risk of long-term methotrexate treatment is liver damage. A small number of people, estimated to be 1 in 200, develop reversible liver scarring. After they stop taking methotrexate, their liver will return to normal. This is a potential risk after an individual has reached a lifetime accumulation of 1.5 grams (g) of methotrexate. How long it takes an individual to reach 1.5 g depends on several factors, including his/her treatment schedule and whether she/he takes any breaks from the drug. In rare instances, some people develop irreversible cirrhosis. The risk can be minimized by monitoring for liver toxicity at regular intervals and by avoiding medications that are known to be toxic to the liver.

In people with a risk factor for liver disease, doctors may perform a liver biopsy to test for liver damage or consult with a specialist once a lifetime accumulation of anywhere from 1.5 g to 3 g has been reached. In a biopsy, a thin needle is inserted through the skin to obtain a small sample of liver tissue. If significant liver damage is shown, methotrexate is usually discontinued. A liver biopsy may need to be repeated at regular intervals. However, some healthcare providers do not recommend biopsies for

• People with pre-existing blood problems such as underdevelopment of bone marrow, low white blood cell count, low platelets or significant anemia, should use methotrexate with caution
patients without elevated risks for liver damage.

The risk of liver damage increases if a person drinks alcohol, has abnormal kidney function, is obese, has diabetes or has had prior liver disease.

People who take methotrexate need to have regular blood tests to ensure that the drug is being safely processed by the body, and that the liver, blood or bone marrow is not negatively affected. Methotrexate can cause a reduced white blood cell count, which can increase the risk of infection.

Pregnancy should be avoided if either partner is taking methotrexate. Men should be off methotrexate at least three months before a couple tries to conceive. Women should wait at least four months after stopping methotrexate to become pregnant. Studies have demonstrated harmful effects of methotrexate on fetal development.

What are the possible side effects?

- Nausea
- Tiredness
- Difficulty sleeping
- Lightheadedness
- Mouth ulcers
- Vomiting
- Headache
These side effects are generally manageable with careful monitoring and patient education.

However, severe nausea or mouth ulcers can indicate that the dose is too high. In rare instances, some serious side effects may occur years after the drug is used, including certain types of cancer, such as lymphoma, and bone marrow toxicity.

Taking folic acid can decrease the severity of side effects of methotrexate during treatment. Talk with your health care provider about recommendations for folic acid supplements.

**What are the potential drug interactions?**

Your health care provider should always be aware of any medications, therapies or dietary supplements you are using. This is especially important when taking methotrexate.

Some over-the-counter (OTC) medications for inflammation or pain (including aspirin and ibuprofen) may increase the side effects of methotrexate.

- Easy bruising and bleeding
- Fever
- Diarrhea with blood in the stool
- Chills
- Sensitivity to sunlight
- Burning sensation in lesions
- Hair loss
Some oral antibiotics can interfere with the absorption of methotrexate. Penicillin can reduce clearance of the drug from the kidneys. Talk to your health care provider before taking any of these drugs while taking methotrexate.

Drinking alcohol while on a course of methotrexate is not recommended because it increases the chance of liver damage. Drugs containing trimethoprim and sulfamethoxazole (such as Septra or Bactrim) must be avoided while on methotrexate. The interaction of these drugs and methotrexate can be fatal.

On rare occasions, sensitivity to light can occur even when methotrexate is taken several days after exposure to ultraviolet light. This is called a “sunburn recall.”

**Can it be used with other treatments?**
Methotrexate is sometimes rotated with other treatments such as PUVA, Soriatane (acitretin), cyclosporine or a biologic. Rotation may decrease side effects.

Methotrexate can be used with PUVA or UVB to reduce the amount of ultraviolet light needed to clear the skin. In unresponsive cases of generalized pustular psoriasis, methotrexate has been used with Soriatane. It has also been used with biologics to prevent resistance and increase response to both medications.

**Soriatane (acitretin)**
**What is it and how does it work?**
Soriatane (acitretin) is an oral retinoid, which is a synthetic form of vitamin A. Synthetic retinoids were approved in the United States in the 1980s. Soriatane is the only oral retinoid approved by the FDA specifically for treating psoriasis. Isotretinoin, another oral retinoid, is sometimes used instead of Soriatane to treat
psoriasis (see page 16 for more about this treatment).
The exact way that Soriatane works to control psoriasis is unknown. In general, retinoids affect how cells regulate their behavior. Retinoids help control the multiplication of cells, including the speed at which skin cells will grow and shed from the skin’s surface, which speeds up in psoriasis.

**How is it used?**
Soriatane comes in 10 milligram (mg), 17.5 mg and 25 mg capsules. The prescribed dose is taken once a day and should be taken with food. Several factors determine the correct dosage for each person, including the type of psoriasis.

Dosage may be reduced after symptoms improve, depending on the person’s response. Ordinarily, retinoid treatment is stopped when lesions have cleared significantly. When lesions or other symptoms reappear, the drug may be restarted.

Soriatane tends to work slowly for plaque psoriasis. Psoriasis may worsen before clearing begins. After eight to 16 weeks of treatment, the skin lesions usually improve. It may take up to six months for the drug to reach its peak effect. Soriatane rarely clears psoriasis alone and works best in combination with phototherapy.

Soriatane is approved for use in adults with severe psoriasis. The Soriatane label supports use of the drug for plaque, guttate, pustular, erythrodermic and palmoplantar psoriasis. Soriatane is helpful in people with psoriasis prone to skin cancers such as squamous cell carcinoma.
Who should not take Soriatane?

- Pregnant women or women who might become pregnant during treatment
- Women who are breastfeeding
- People with severe liver or kidney disease
- People who repeatedly show a high level of fat in the blood that cannot be controlled by medications
- People who are allergic to or have hypersensitivity to retinoids

What are the risks?
The most serious risk with Soriatane is the risk of severe birth defects in developing fetuses if a woman has the drug in her body during pregnancy. Soriatane can remain in the body for many months, so it should not be taken for three years before pregnancy. Because of the risk of birth defects, women of childbearing potential must have two negative pregnancy tests before starting Soriatane. They must use two effective forms of birth control at least one month before beginning treatment, while on the drug and for three years after stopping treatment. Women who become pregnant during the three years following treatment should seek the advice of a doctor who specializes in high-risk pregnancies.

Progestin-only birth control pills may not work while taking Soriatane, so women should not use them as a primary form of birth control.

People should not donate blood during treatment and for three years after
These side effects, and others, seem to be dose dependent. They tend to go away after stopping the medication or reducing the dosage.

What are the possible side effects?

- Hair loss
- Chapped lips and dry mouth
- Dry skin and dry eyes
- Bleeding gums and nose bleeds
- Increased sensitivity to sunlight
- Peeling fingertips and nail changes
- “Sticky” skin sensation
- Changes in blood fat level
- Depression
- Aggressive thoughts or thoughts of self-harm
- Headache
- Joint pain
- Decreased night vision
- Elevated liver enzymes

stopping treatment. Donated blood could expose pregnant women to Soriatane.
What are the potential drug interactions?

Your health care provider should always be aware of any medications, therapies or supplements you are using. Avoid dietary supplements that have vitamin A. Soriatane is related to vitamin A, and taking vitamin A could add to any side effects Soriatane might cause.

Women of childbearing age who use Soriatane must not drink or eat anything containing alcohol during treatment and for two months after treatment is stopped. Consuming alcohol can cause Soriatane to stay in your body longer, which increases the risk of birth defects if a woman becomes pregnant.

Soriatane can reduce the effectiveness of phenytoin, a common drug for epilepsy, when taken concurrently.

Soriatane should not be taken concurrently with tetracycline, an antibiotic, since both medications can cause increased pressure on the brain, which can have serious consequences.

Can it be used with other treatments?

Soriatane is most effective for treating psoriasis when used in combination with phototherapy rather than by itself. Combination therapy can speed clearing and help reduce the amount of phototherapy needed to clear symptoms. This reduces the risks and side effects of both treatments.

Soriatane is sometimes used with the biologic drugs Enbrel and Remicade to achieve clearing of psoriasis. Soriatane may also be prescribed in rotation with other systemic medications, such as cyclosporine or methotrexate.
OTHER SYSTEMIC MEDICATIONS

The following systemic medications are not approved by the FDA for the treatment of psoriasis or psoriatic arthritis. However, some doctors prescribe them “off-label”—a common and accepted medical practice.

Antimalarial therapy

Antimalarial therapy is sometimes used to treat psoriatic arthritis. Certain antimalarial drugs may trigger psoriasis symptoms in some people, so it’s advisable to talk with your health care provider about this treatment option.

Hydroxyurea

Hydrea is an oral cancer medication that, in the late 1960s, was found to be effective for psoriasis. Although not as effective as methotrexate, it is less likely to cause liver damage with long-term use. While fewer people will have an acceptable response than with methotrexate, Hydrea can produce significant improvement in stable plaque psoriasis in about half of those who tolerate it. The major side effect of Hydrea is bone marrow toxicity. If this develops, it can occur quite rapidly, so close monitoring is important, especially in the first several months. Long-term use has been associated with skin cancer.

Isotretinoin

Isotretinoin is an oral retinoid (a synthetic form of vitamin A) that was approved as a treatment for severe cystic acne in 1982. Some doctors have used it successfully to treat pustular psoriasis. Generally, it is not as effective as Soriatane for plaque psoriasis.

Isotretinoin has many side effects similar to
Soriatane (see discussion of Soriatane on page 11). The most common side effects are eye and lip dryness and nosebleeds. Bone spurs and hair loss occur to a lesser degree. Isotretinoin leaves the body much faster than Soriatane, and some doctors consider it safer for women of childbearing potential. However, it also can cause severe birth defects if a woman becomes pregnant while the drug is in her system. Women of childbearing potential who take isotretinoin should use reliable birth control one month before treatment, during treatment and for at least one month after stopping treatment.

**Mycophenolatemofetil (Cellcept)**
Mycophenolatemofetil has been used to prevent organ transplant rejection. It has also been used for treatment of several inflammatory or autoimmune skin diseases and liver diseases such as hepatitis. It can be used in combination with cyclosporine, and some doctors use it when tapering patients off cyclosporine. Many doctors believe that it is not very effective as a stand-alone treatment for psoriasis. It can suppress the immune system, so people with a compromised immune system should not take it.

**Nonsteroidal anti-inflammatory drugs (NSAIDs)**
NSAIDs can help relieve the pain, swelling and stiffness of psoriatic arthritis. They are available in over-the-counter and prescription strengths. Examples of over-the-counter NSAIDs include aspirin, ibuprofen (Advil, Motrin) and naproxen sodium (Aleve). If you are taking frequent doses of one of these NSAIDs to control your arthritis, you may need to move to prescription-strength medications. Talk to a rheumatologist about the best options to control your symptoms and prevent
permanent joint damage.

**Sulfasalazine (Azulfidine)**

A combination anti-inflammatory and antibiotic, sulfasalazine is sometimes used to treat psoriatic arthritis. It is generally regarded as being only modestly effective for plaque psoriasis. Many doctors think that methotrexate is more effective than sulfasalazine. However, sulfasalazine’s side effects tend to be less dangerous. Therefore, trying this medication may be worthwhile for some. Many people cannot tolerate sulfasalazine because of an allergy to sulfa or because of side effects, including nausea, vomiting and loss of appetite.

**6-Thioguanine**

6-Thioguanine is an oral medication approved for treating certain types of leukemia. It is effective for plaque psoriasis and has been used to treat pustular psoriasis. 6-Thioguanine requires close medical supervision to watch for potential severe side effects, including suppression of bone marrow. Most people who use it feel that it works as often and as well as methotrexate.

---

**BIOLOGIC TREATMENTS**

The biologics are a newer class of prescription medications for treating psoriasis and psoriatic arthritis. They are administered by injection into the skin or muscle or through intravenous (IV) infusion.

**What are they and how do they work?**

A biologic is a drug or vaccine that comes from living sources, such as human or animal proteins. Biologics have been around for more than 100 years. However, they have been used for just a little over a decade for psoriasis and
psoriatic arthritis.

Specialists who treat psoriatic diseases believe that all systemic treatments that work for psoriasis and psoriatic arthritis affect the immune system in some way. Methotrexate and cyclosporine have a broad impact on the immune system and can potentially cause serious side effects in other organs. The biologics target proteins known to be involved primarily in the immune system. They are considered to be less likely to affect other body organ systems, although their long-term effects are still being evaluated. Biologics work by blocking the action of certain immune cells or chemical messengers that play a role in psoriasis and psoriatic arthritis. There are currently two types of biologics for treating psoriatic diseases:

**Tumor necrosis factor-alpha blockers**

Five biologic medications—Cimzia (certolizumab pegol), Enbrel (etanercept), Humira (adalimumab), Remicade (infliximab) and Simponi (golimumab)—block tumor necrosis factor alpha (TNF-alpha). TNF-alpha is a chemical messenger, or cytokine, of the immune system that causes cells to release other proteins that add to the inflammatory process. In psoriasis and psoriatic arthritis, there is excess production of TNF-alpha in the skin or joints. This leads to the rapid growth of skin cells typical of psoriasis, or to the joint inflammation characterized by stiffness, pain, warmth and redness seen in psoriatic arthritis. A reduction in TNF-alpha stops the inflammatory cycle of psoriasis and psoriatic arthritis.

**Interleukin 12/23**

The biologic Stelara (ustekinumab) works
by selectively targeting the cytokines interleukin-12 (IL-12) and interleukin-23 (IL-23). These proteins are believed to play a role in psoriasis and psoriatic arthritis, and are thought to promote the accumulation of psoriatic disease-causing T cells. By preventing these two proteins from attaching to cells in the body, Stelara reduces inflammation and improves psoriatic disease symptoms for many people who take it.

How are they used?
Biologics are administered by injection or by intravenous (IV) infusion. Stelara is injected subcutaneously (just under the skin) in a doctor’s office, or by self-injection. Typically, people give themselves injections of Cimzia, Enbrel, Humira and Simponi at home in a manner similar to that used by people with diabetes giving themselves insulin injections. Remicade is given through IV infusion in a doctor’s office or an infusion center.

Doctors are most likely to recommend biologics for people with moderate to severe cases of psoriasis and psoriatic arthritis who have not responded to other treatments. They offer another option for those who cannot take some medications because of side effects. Biologics can be very effective in improving psoriasis and psoriatic arthritis. Three drugs—Enbrel, Humira and Remicade—have been shown in clinical trials to decrease progressive joint damage in psoriatic arthritis.

Who should not take biologics?
• People whose immune systems are already significantly compromised
What are the risks?

Biologics for psoriasis and psoriatic arthritis are still relatively new and their overall safety is still being evaluated. People considering treatment with biologics should talk with their doctor about the short- and long-term side effects and risks, which should be weighed carefully against the risks of other treatment options.

Because biologics suppress the immune system, people taking them could be at an increased risk of infection. If they notice any sign of an infection, they should contact their doctor right away.

Drugs that suppress the immune system can increase the risk of some types of cancer. As a result, various studies have looked at a possible

- Individuals with active infections
- People with active tuberculosis or with a positive TB test who have not been treated with a course of isoniazid (INH) as recommended by the American Thoracic Society
- People with multiple sclerosis or a first-degree relative with multiple sclerosis should avoid TNF alpha blockers
- People with congestive heart failure, including those whose symptoms rank class 3 or 4 in the New York Heart Association (NYHA) classification of heart failure should avoid TNF alpha blockers
- People who have recently received a live vaccine
link between biologic therapy and lymphomas and skin cancer, but data are inconclusive. Biologics have not been tested in patients with internal malignancies.

The risks of biologics for pregnant women or developing fetuses have not been studied comprehensively. TNF-Alpha blockers can be prescribed for a pregnant or nursing woman if the medical need is clear and the doctor and patient make the decision together.

What are the possible side effects?
The side effects for biologic medications vary. Common side effects for TNF-alpha blockers include:

- Abdominal pain
- Upper-respiratory infections
- Headache
- Flu-like symptoms
- Injection-site reactions (such as swelling, itch or rash) for self-injected biologics

Side effects for IL-12/23 blockers like Stelara include:

- Headache
- Fatigue or tiredness
- Respiratory infections
- Hypersensitivity reactions
The side effects of biologics are generally mild and in most cases do not cause people to stop taking the medication. You should tell your health care provider about any side effect that bothers you or does not go away.

**Can they be used with other treatments?**
All of the current biologics can and have been used with other psoriasis treatments, such as phototherapy or topicals. Enbrel, Humira, Remicade, Stelara and Simponi are safe and effective when taken with methotrexate. Some people have seen success using Soriatane with different biologics. TNF alpha blockers should be avoided in conjunction with other biologics such as those used for rheumatoid arthritis. They should be used with caution with other immune suppressing drugs such as cyclophosphamide, azothioprine and 6-mercaptopurine. Talk to your health care provider about whether using any other treatments with a biologic is right for you.

**Cimzia (certolizumab pegol)**

- FDA-approved for treating psoriatic arthritis, rheumatoid arthritis and Crohn’s disease
- Patients should be screened for latent tuberculosis (TB) before starting Cimzia
- Patients give themselves an injection under the skin every other week
- Drug is taken continuously to maintain results
- May reduce the progression of joint damage and improves quality of life
- Occasional blood tests are recommended
Enbrel (etanercept)

- FDA-approved for treating psoriasis, psoriatic arthritis, juvenile idiopathic arthritis, rheumatoid arthritis and ankylosing spondylitis
- Patients should be screened for latent tuberculosis (TB) before starting Enbrel
- Patients give themselves an injection under the skin once or twice a week
- Drug is taken continuously to maintain results
- May reduce the progression of joint damage and improves quality of life
- Occasional blood tests are recommended

Humira (adalimumab)

- FDA-approved for treating psoriasis, psoriatic arthritis, ankylosing spondylitis, crohn’s disease, ulcerative colitis and rheumatoid arthritis
- Patients should be screened for latent tuberculosis before starting Humira
- Patients give themselves an injection under the skin, usually every other week
- May reduce the progression of joint damage
- Occasional blood tests are recommended
Remicade (infliximab)

- FDA-approved for psoriasis, psoriatic arthritis, rheumatoid arthritis, ulcerative colitis, ankylosing spondylitis and Crohn’s disease
- Patients should be screened for latent tuberculosis before starting Remicade
- Administered by three infusions in a doctor’s office during the first six weeks of treatment
- Later infusions repeated every eight weeks
- May reduce the progression of joint damage
- Blood tests are recommended on a regular basis

Simponi (golimumab)

- FDA-approved for treating psoriatic arthritis, ankylosing spondylitis and rheumatoid arthritis
- Patients should be screened for latent tuberculosis before starting Simponi
- Patients give themselves an injection under the skin once per month
- May reduce the progression of joint damage
- Blood tests are recommended on a regular basis
Otezla is a new oral treatment option for treating psoriatic arthritis. Unlike earlier oral disease-modifying antirheumatic drugs for psoriatic arthritis, this oral medication selectively targets molecules inside immune cells. By adjusting the complicated processes of inflammation within the cell, this treatment corrects the overactive immune response that causes inflammation in people with psoriatic arthritis, leading to improvement in joint tenderness and swelling.

**Otezla (apremilast)**

**What is it and how does it work?**

Otezla treats psoriatic arthritis by regulating inflammation within the cell. It inhibits an enzyme known as phosphodiesterase 4, or PDE4. PDE4 controls much of the inflammatory action within cells, which can affect the level of inflammation associated with psoriatic arthritis.

**How is it used?**

Otezla is available as a 30 (mg) tablet taken by
mouth. Otezla dosing begins with a five day start period, where the dosage will gradually increase until the recommended dose of 30 milligrams twice daily is reached. Otezla is designed to be taken continuously to maintain improvement.

**Who should not take Otezla?**
The safety and effectiveness of Otezla in people under 18 years of age has not been established. Additionally, the dose of Otezla should be modified or reduced in people with severe renal impairment. Nursing women should use caution when taking Otezla. People with a known severe allergic reaction to this treatment or its components should not take Otezla.

**What are the risks?**
In clinical trials, 10 percent of people taking Otezla reported unexplained weight loss of 5 to 10 percent during the trial. It is recommended that people taking Otezla have their weight monitored regularly. Treatment with Otezla is associated with an increase in adverse reactions of depression. People experiencing worsening of mood while taking Otezla should contact their doctor.

**What are the possible side effects?**
In clinical trials, the most common side effects were diarrhea, nausea and headache, which occurred in the first two weeks and tended to lessen with continued treatment.

**Can Otezla be used with other treatments?**
Otezla can be used with other treatments. In clinical trials, no significant impacts were observed when 30 mg of Otezla was taken with either oral birth control, ketoconazole (antifungal medication), or methotrexate. Taking a CYP450 inducer treatment (such as rifampin, a medication used to treat tuberculosis) at the same time as
Thanks to diligent scientific research, today’s treatments are providing a wide range of safe and effective options for people with psoriasis and psoriatic arthritis. And the search continues to find safer and even more effective treatments.

The National Psoriasis Foundation tracks the movement of drugs for psoriasis and psoriatic arthritis from preliminary studies through the three phases of clinical trials as required by the U.S. Food and Drug Administration. This information is compiled, along with that from other sources, and entered into our drug research pipeline.

To learn more about research and upcoming treatments visit www.psoriasis.org/drug-pipline
We’re here for you.  
At the National Psoriasis Foundation, our priority is giving you the information and services you need to take control of your psoriasis and/or psoriatic arthritis, while funding research to find a cure.

RESEARCH

Finding a cure for psoriasis and psoriatic arthritis is our highest priority. We’re working for you by:

• Funding promising new studies through our Discovery and Translational grants programs
• Increasing the number of scientists doing research through our Medical Fellowship program
• Hosting the world’s largest collection of psoriasis DNA for genetic research

ADVOCACY

We’re ensuring that people with psoriasis and psoriatic arthritis have a say in the policies that affect their lives. Join us as we:

• Work to increase federal funding for psoriasis
and psoriatic arthritis research

- Improve access to health care for patients

**HEALTH EDUCATION**

National Psoriasis Foundation is your one-stop shop for news and information about psoriasis and psoriatic arthritis. Visit www.psoriasis.org to learn more about:

- The latest treatment information and research updates
- Health events in your area

**CONNECTION**

Sometimes the best resource to manage psoriasis and psoriatic arthritis is another person with your condition. Share information and get support from:

- TalkPsoriasis.org, the largest online community for people affected by psoriasis and psoriatic arthritis
- Psoriasis One to One mentor program

**LEARN MORE**

Find more information and resources at www.psoriasis.org.
We’re here for you. At the National Psoriasis Foundation, our priority is giving you the information and services you need to take control of your psoriasis and/or psoriatic arthritis, while funding research to find a cure.

RESEARCH

Finding a cure for psoriasis and psoriatic arthritis involves research. Become a member of the National Psoriasis Foundation and get the tools and information you need to manage your psoriasis and/or psoriatic arthritis. As a member, you’ll receive a full year of *Psoriasis Advance* magazine as well as other benefits and services designed to help you live well with psoriatic diseases.

☐ Yes, I want to join the National Psoriasis Foundation. Please send me a bill for $35.

For faster service, join online at [www.psoriasis.org](http://www.psoriasis.org) or call 800.723.9166.

Name __________________________________________

_______________________________________________

Address _________________________________________

_______________________________________________

City _____________________________________________

State ________________ ZIP _________________

_______________________________________________

Phone __________________________________________
National Psoriasis Foundation is a 501 (c) (3) charitable organization governed by a volunteer Board of Trustees and advised on medical issues by a volunteer Medical Board.

National Psoriasis Foundation educational materials are reviewed by members of our Medical Board and are not intended to replace the counsel of a physician. National Psoriasis Foundation does not endorse any medications, products or treatments for psoriasis or psoriatic arthritis and advises you to consult a physician before initiating any treatment.

©2014 National Psoriasis Foundation   May 2014

National Psoriasis Foundation
6600 SW 92nd Ave., Suite 300, Portland, OR 97223-7195
800.723.9166   |  getinfo@psoriasis.org   |   www.psoriasis.org