

Chapter 1 : What Are the Different Types of Rosacea? – Dr. Leslie Baumann

While the ravages of subtype 3 (phymatous) rosacea have been well documented throughout history, today a multitude of options are available to restore a red, swollen or bumpy nose (rhinophyma) to normal appearance.

Contact Treatments for rosacea There are four identified rosacea subtypes. Many patients experience characteristics of more than one subtype at the same time, and those often may develop in succession. While rosacea may or may not develop from one subtype to another, each individual sign or symptom may progress from mild to moderate to severe. Early diagnosis and treatment are, therefore, recommended. Typical Rosacea Sub type 1 Treatments for Rosacea subtype 1 People with Subtype 1 rosacea have very easily irritated skin. It often feels tight and is sensitive. Sub type 1 also tends to have very dry skin. Dermatology times jan Finola says: This is why the finca serum worked so well for me because it adds oils and moisture to the skin which is naturally lacking and does so in a way that is non irritating.. Finca skin organics serum and finca skin organics sunscreen The appearance of flushing, redness and visible blood vessels may also be reduced with cosmetics. Products with a green or yellow tint can counteract visible redness, and cover makeup may be used to conceal visible blood vessels and other signs of rosacea. For Women - Avoid hair colourants with any red tints in them as this only highlights the redness in the face. Also some hair colours can bring about a facial reaction in rosacea sufferers nevermind your scalp giving you grief! Visit your local health food store and look at the more natural options available and if all else fails take an anti histamine a while before applying the colour. Laser therapy is good if a person with Subtype 1 has very small, red spider veins. The photo below shows the good results which can be achieved with laser therapy or intense pulsed light therapy IPL. A high sun factor of at least 30 needs to be applied after treatment. For the treatment of just broken veins, diathermy needle treatment is a lot cheaper and accurate costs from 50 euro upwards for each treatment and doesnt hurt Only use a therapist who is qualified and can give patient references or before and after photos of previous patients. If not you could end up with a patchy effect and risk of actual damage to the skin. Laser therapy and those that treat rosacea using laser therapy can promise much. Whilst it is difficult to very accurately predict results, experienced therapists should be able to look at your skin and predict improvement rates based on previous clients. Especially when paying up o euro for treatments. As a customer you should insist on realistic improvement predictions or take your money elsewhere!! Mi skin Drogheda have had good success treating type 2 rosacea - as can be seen from their website <http://www.miskin.com> Erythema redness of the face in Subtype 1 rosacea can also be successfully treated with brimonidine tartrate gel better known as Mirvaso. Rosacea forums have seen some mixed reaction with this mirvaso gel. It is only in use within the last year or so. It works by constricting the blood vessels near the skin surface bringing about a reduction in redness – which makes logical sense. The effect however is temporary – approx. Treatments for Rosacea subtype 2 papulopustular Persistent redness around the centre of the face, with bumps and pimples resembling acne. Burning and stinging may also occur. This type is often seen after or in combination with subtype1. Sub type 2 skin is mainly oily or greasy. But remember Subtype 2 is the type of rosacea that responds most easily to treatment. Many say to only use apple cider vinegar if you have the papules and postules, as they may irritate the skin too much otherwise. Take it easy and look at how your skin reacts. Apple Cider Vinegar can also be taken internally see diet and rosacea. Tea Tree Oil Never apply undiluted tea tree oil. Use a q-tip and apply the tea tree oil only in the affected area. If you use a moisturizer, you can mix in some tea tree oil and see how it feels. Again, start with a small dose to see how your skin reacts. Alternatively, finca skin organics type 2 serum contains a small amount of tea tree oil as well as other natural anti inflammatory ingredients such as licorice root and green tea - Apply the type 2 serum to raised bumps and pustules areas. Postular rosacea also responds well to a drug called Ivermectin. It is is a broad-spectrum antiparasitic agent, traditionally used against parasitic worms. Ivermectin acts as an anti inflammatory as well as acting against the dermodex mite. Topical antibiotics creams ; Systemic antibiotics oral tablets ; - it may take a couple of trials with different anti biotics to find one that works for you. Always take a pro biotic when on a course of anti biotics to help keep your levels of good bacteria in your gut healthy. Available on the product section of this website.

Topical metronidazole, azelaic acid In cases that prove difficult to treat, isotretinoin Roacutane is sometimes useful, but people do usually relapse within a year of using it. IPL can also successfully treat the symptoms of type 2 rosacea May occur after or in combination with subtypes 1 and 2.

Chapter 2 : Rosacea Management

Rosacea subtype 3, also called "phymatous rosacea", is a more severe form of rosacea that results in enlarged skin pores and areas of thickened skin with irregular nodules. The thickened skin usually appears on the nose and forehead.

References Rosacea is a chronic facial skin condition of unknown cause. It is characterized by marked involvement of the central face with transient or persistent erythema, telangiectasia, inflammatory papules and pustules, or hyperplasia of the connective tissue. Transient erythema, or flushing, is often accompanied by a feeling of warmth. It usually lasts for less than five minutes and may spread to the neck and chest. Less common findings include erythematous plaques, scaling, edema, phymatous changes thickening of skin due to hyperplasia of sebaceous glands, and ocular symptoms. The National Rosacea Society Expert Committee defines four subtypes of rosacea erythematotelangiectatic, papulopustular, phymatous, and ocular and one variant granulomatous. Treatment starts with avoidance of triggers and use of mild cleansing agents and moisturizing regimens, as well as photoprotection with wide-brimmed hats and broad-spectrum sunscreens minimum sun protection factor of 30. For inflammatory lesions and erythema, the recommended initial treatments are topical metronidazole or azelaic acid. Once-daily brimonidine, a topical alpha-adrenergic receptor agonist, is effective in reducing erythema. Papulopustular rosacea can be treated with systemic therapy including tetracyclines, most commonly subantimicrobial-dose doxycycline. Phymatous rosacea is treated primarily with laser or light-based therapies. Ocular rosacea is managed with lid hygiene, topical cyclosporine, and topical or systemic antibiotics. Rosacea is a chronic facial skin condition characterized by marked involvement of the central face with transient or persistent erythema, inflammatory papules or pustules, telangiectasia, or hyperplasia of the connective tissue. Rosacea can be associated with low self-esteem, embarrassment, and diminished quality of life. C First-line therapy for mild to moderate inflammatory rosacea includes topical metronidazole Metro lotion, Metrocream, Metrogel or azelaic acid Finacea. A Brimonidine Mirvaso can be used to treat persistent facial erythema associated with rosacea. A Topical ivermectin Soolantra may be used for the treatment of papulopustular rosacea. B Subantimicrobial-dose doxycycline Oracea can be used to treat inflammatory lesions of papulopustular rosacea. A Subantimicrobial-dose doxycycline in combination with topical azelaic acid or metronidazole can be used to treat moderate to severe inflammatory lesions or mild inflammatory lesions that have not responded to initial therapy. C Mild ocular rosacea should be treated with eyelid hygiene and topical antibiotic agents, such as metronidazole and erythromycin. C Topical ophthalmic cyclosporine drops Restasis are more effective than artificial tears in the management of mild ocular rosacea. For information about the SORT evidence rating system, go to <https://www.sort-evidence.com/>: The exact prevalence of rosacea in the United States is unknown 4, 5; however, it is probably between 1.

Chapter 3 : New Study Shows Possible Cause of Rosacea Bumps

Forum: Phymatous rosacea (Rhinophyma) Subtype 3 - most commonly associated with Rhinophyma, characterized by skin thickening, often resulting in an enlargement of the nose from excess tissue.

Signs and symptoms[edit] Rosacea on the face Erythrotelangiectatic rosacea[edit] Erythrotelangiectatic rosacea also known as "Erythematotelangiectatic rosacea" [8] and "vascular rosacea" [8] is characterized by prominent history of prolonged over ten minutes flushing reaction to various stimuli , such as emotional stress , hot drinks, alcohol , spicy foods, exercise , cold or hot weather, or hot baths and showers. The exact cause of rosacea is unknown. Exposure to temperature extremes, strenuous exercise, heat from sunlight, severe sunburn , stress, anxiety, cold wind, and moving to a warm or hot environment from a cold one, such as heated shops and offices during the winter, can each cause the face to become flushed. Some acne and wrinkle treatments reported to cause rosacea include microdermabrasion and chemical peels , as well as high dosages of isotretinoin , benzoyl peroxide , and tretinoin. Steroid -induced rosacea is caused by the use of topical steroids. Dosage should be slowly decreased and not immediately stopped to avoid a flare-up. Cathelicidins[edit] In , Richard Gallo and colleagues noticed that patients with rosacea had high levels of the antimicrobial peptide cathelicidin [12] and elevated levels of stratum corneum tryptic enzymes SCTEs. Antibiotics have been used in the past to treat rosacea, but they may only work because they inhibit some SCTEs. On other occasions, demodicidosis commonly known as "mange" is a separate condition that may have "rosacea-like" appearances. When analyzing blood samples using a peripheral blood mononuclear cell proliferation assay, they discovered that B. They concluded that "[t]he immune response results in inflammation, as evident in the papules bumps and pustules pimples of subtype 2 rosacea. This suggests that the B. Conversely in rosacea patients who were SIBO negative, antibiotic therapy had no effect. Diagnosis[edit] Most people with rosacea have only mild redness and are never formally diagnosed or treated. No test for rosacea is known. In many cases, simple visual inspection by a trained health care professional is sufficient for diagnosis. In other cases, particularly when pimples or redness on less-common parts of the face is present, a trial of common treatments is useful for confirming a suspected diagnosis. The disorder can be confused or co-exist with acne vulgaris or seborrheic dermatitis. The presence of rash on the scalp or ears suggests a different or co-existing diagnosis because rosacea is primarily a facial diagnosis, although it may occasionally appear in these other areas. Classification[edit] Zones Four rosacea subtypes exist, [16] and a patient may have more than one subtype: Skin can also become very dry and flaky. In addition to the face, signs can also appear on the ears, neck, chest, upper back, and scalp. This subtype is often confused with acne. Phymatous rosacea is most commonly associated with rhinophyma , an enlargement of the nose. Signs include thickening skin, irregular surface nodularities, and enlargement. Phymatous rosacea can also affect the chin gnathophyma , forehead metophyma , cheeks, eyelids blepharophyma , and ears otophyma. In ocular rosacea , affected eyes and eyelids may appear red due to telangiectasias and inflammation, and may feel dry, irritated, or gritty. Other symptoms include foreign body sensations, itching, burning, stinging, and sensitivity to light. About half of the people with subtypes 1 also have eye symptoms. Blurry vision and vision loss can occur if the cornea is affected. A subtype-directed approach to treating rosacea patients is recommended to dermatologists. Therapy for the treatment of rosacea is not curative, and is best measured in terms of reduction in the amount of facial redness and inflammatory lesions, a decrease in the number, duration, and intensity of flares, and concomitant symptoms of itching, burning, and tenderness. The two primary modalities of rosacea treatment are topical and oral antibiotic agents. Long-term treatment, usually one to two years, may result in permanent control of the condition for some patients. Keeping a journal is sometimes recommended to help identify and reduce food and beverage triggers. Because sunlight is a common trigger, avoiding excessive exposure to the sun is widely recommended. Some people with rosacea benefit from daily use of a sunscreen ; others opt for wearing hats with broad brims. Like sunlight, emotional stress can also trigger rosacea. People who develop infections of the eyelids must practice frequent eyelid hygiene. Managing pretrigger events such as prolonged exposure to cool environments can directly influence warm room flushing. Oral antibiotics of the tetracycline class such as

doxycycline and oxytetracycline are also commonly used and thought to reduce papulopustular lesions through anti-inflammatory actions rather than through their antibacterial capabilities. If papules and pustules persist, then sometimes isotretinoin can be prescribed.

Please read this notice about Subtypes Subtype 3 is now known as Phenotype Phymatous (Rhinophyma).

Rhinophyma phymatous rosacea ICD-9 What you should be alert for in the history Rhinophyma is a progressive disfiguring condition of the nose associated with rosacea, and is considered to be one of the four rosacea subtypes. There is hypertrophy of sebaceous glands and connective tissue, and it is thought to represent the end stage of severe rosacea. Four variants of rhinophyma have been described: These all have distinct clinical and histologic features. When these hypertrophic changes occur in other locations, they are termed otophyma ear , gnatophyma chin , metophyma forehead , and blepharophyma eyelid. Characteristic findings on physical examination On physical examination, patients with rhinophyma have loss of normal shape of the nose along with overgrowth of nodules, and the presence of telangiectasias and pustules. Patients often have sebaceous discharge from the dilated pilosebaceous units on the nose Figure 1. Rhinophyma in a 60 year old. Note the loss of normal architecture, prominent pilosebaceous structures, and the presence of pustules. The color of the nose may range from erythematous to purple. Alar creases may become ill-defined and the texture of the nose is firm and thickened. Lobular overgrowth of tissue may produce airflow obstruction by direct compression of the nasal sidewall, or physical occlusion of the nares Figure 2. The nose may become markedly distorted with loss of the aesthetic subunits. The extreme enlargement is usually limited to the lower two-thirds of the nose. Rhinophyma resulting in collapse of ala and airflow obstruction. Patients often suffer significant social embarrassment from the disfiguring appearance and it often may result in social reclusion. Additionally, the conflicting reports that rhinophyma is linked to alcoholism can cause increased embarrassment for patients with this condition. There is little or no statistical evidence to support the association with alcohol consumption. Expected results of diagnostic studies The diagnosis of rhinophyma is usually made clinically. The characteristic skin changes and deformities, often in the setting of a patient with a history of rosacea, are usually adequate to make the diagnosis. Diagnosis confirmation When the clinical picture is not clear, a biopsy can be performed. Histologically there are two main variants. The early common form of rhinophyma will demonstrate features of rosacea in addition to prominent sebaceous hypertrophy within an abundant fibrovascular myxoid stroma. Fibrosis, acanthosis, and a lymphocytic infiltrate can be seen, and dilated sebaceous ducts filled with sebum are present. The more severe fibrotic forms of rhinophyma will show marked dermal thickness, absence of sebaceous structures, sclerotic collagen and diffuse dermal telangiectasias. Sarcoidosis, angiosarcoma, granuloma faciale, B-cell lymphoma, and sebaceous carcinoma have been reported to mimic rhinophyma clinically, but can be distinguished histologically. Who is at Risk for Developing this Disease? Rhinophyma almost exclusively affects men, with a ratio of men to women ranging from Most commonly it is seen in the fifth to seventh decades of life. There have been several patients reported to have developed rhinophyma prior to the age of 30, with the youngest patient having onset at age Rhinophyma is primarily seen in Caucasians with few reported cases in Asian and African populations. Patients with glandular rosacea, a form of rosacea characterized by thick sebaceous skin with edematous papules and pustules, may be predisposed to the development of rhinophyma. What is the Cause of the Disease? Pathophysiology The etiology of rhinophyma is unclear, as is the etiology of rosacea. The progression of fibrotic changes seen histologically as the condition becomes more severe suggests that pathogenesis may be related to chronic inflammation and lymphedema. Systemic Implications and Complications The degree of distortion may be so severe that the nostrils may become obstructed. Patients may be depressed and suffer from social isolation because of their appearance. Treatment Options Nonsurgical options Whereas retinoids, antibiotics, and other topical medicines can be quite effective in the treatment of rosacea, there have been no regimens successful in preventing development of rhinophyma or satisfactory treatment of rhinophyma. Isotretinoin has been shown to be effective in decreasing nasal volume, when used early in the course of the disease, and in younger patients. Surgical treatment Surgery is the only effective treatment for extensive rhinophyma to date. Surgical options include laser therapy, cold steel surgery, cryosurgery, electrosurgery, dermabrasion, excision with grafting, wire loop excision, and Shaw scalpel

resection. The techniques vary in success, but all aim to debulk the overgrowth of tissue and produce normal nose contour with minimal scarring, distortion, and pigmentary change. A combination of surgical approaches may be used for the best aesthetic result. Due to the prominent fibrosis that occurs, and the up-regulation of growth and fibroblast markers seen in fibrosis, it was postulated that the use of tamoxifen could be of benefit. Tamoxifen can downregulate TGF-beta, which can be associated with increased fibroblast function in rhinophyma. In one study, tamoxifen was shown to decrease the production and secretion of TGF-Beta 2 in rhinophyma fibroblasts. Further research on tamoxifen or other compounds that can down regulate TGF-beta involved in fibrosis may provide other nonsurgical options in the future. If the rhinophyma is mild, consideration could be given for a trial of isotretinoin. Various dosing regimens have been proposed including low dose 10mg daily for months. If isotretinoin is used, but surgery is to also be performed, a common convention is to wait 6 months prior to surgery but there is little data to support this. If the patient is a candidate for surgical resection, a variety of modalities are available, as described above. It may be helpful to have the patient bring in a picture demonstrating the natural contour of the nose prior to the development of rhinophyma. This can be helpful in outlining the amount of tissue to be removed to produce the most acceptable result. Whatever method is employed, it is often wise to remove slightly less tissue than planned, in order to account for post procedure fibrosis and contraction, and loss of tissue with eschar formation. Surface texture and color are most normal when the level of resection of treatment does not go below the depth of the pilosebaceous apparatus. This allows preservation of the normal pilosebaceous pore pattern and color. Surgical treatment may be performed under local anesthesia using lidocaine with epinephrine. In some cases, general anesthesia or conscious sedation could be considered. Use of the Shaw scalpel to resect rhinophyma has been used successfully. The main advantage of this method is the hemostatic properties of the scalpel. Because of the highly vascular nature of a rhinophymatous nose, many other approaches are difficult because of extensive bleeding, making it difficult to visualize the surgical area and perfectly contour the nose. The Shaw scalpel is a heated scalpel, that can be used at temperatures of degrees Celsius or higher. The hemostatic properties allow for adequate visualization of the underlying tissue, and also provide the precision of a scalpel for contouring. A specimen is preserved that may be sent for pathologic examination, which is an advantage over several other techniques Figure 3.

Subtype 3: Enlargement of the Nose (Phymatous Rosacea) - This type is characterized by thickening of the skin and enlargement of the nose. Subtype 4: Eye Irritation (Ocular Rosacea) - This type is found around the eye, including dry eyes, excessive tearing, burning eyes, swollen eyelids, vision lost, recurrence of sties, and corneal damage.

Benzoyl peroxide-antibiotic combination products combined with clindamycin, erythromycin, etc. If allergic or intolerant to tetracyclines, systemic macrolides can be used erythromycin mg daily-twice daily; azithromycin mg thrice weekly. Spironolactone mg daily for women if papulopustular lesions predominate. Oral contraceptive pills for women. Surgical options For phymatous patients: Refer to ophthalmology for more severe disease to address inflammation topical steroids , infection topical antibiotics , or dry eyes topical cyclosporine 0. Omega-3 fatty acid supplementation decrease inflammation and improve the quality of meibomian gland secretion. If possible from a financial point of view, vascular laser is a first-line therapy. There have been reports of some patients having short-term decreases in erythema using topical oxymetazoline used similarly to brimonidine tartrate gel but we do not generally recommend this for our patients. There is a risk of rebound erythema, flushing, and burning and it provides only short-term improvement. Papulopustular subtype In the morning, use topical metronidazole, azelaic acid, or sodium sulfacetamide-sulfur and a sunscreen; in the evening, use sodium sulfacetamide-sulfur cleanser and one of the preceding topical options listed for morning use. Use oral antibiotics or isotretinoin depending on severity. Glandular subtype The benzoyl peroxide-antibiotic combination is the most effective. Ocular subtype Encourage lid hygiene and refer to ophthalmology for more severe disease. Use oral antibiotics for moderate to severe ocular rosacea. Patient Management Most patients will need re-assessment in months to evaluate therapy. Isotretinoin use will require more aggressive monitoring. If patients are not improving after months, more aggressive therapy should be pursued. Patients should be educated that this is a chronic condition. Unusual Clinical Scenarios to Consider in Patient Management Patients that develop facial edema need to be closely monitored and treated aggressively to avoid solid facial edema. For lymphedematous lesions, one of the authors JC has had success with cetirizine 10 mg daily or twice daily. Solid facial edema may respond to isotretinoin. What is the Evidence? A Cohort-Based Survey of Twins". A study of twin pairs with rosacea demonstrating that about half of their rosacea has a genetic contribution and the other half is due to environmental factors. Etiology, pathogenesis, and subtype classification". J Am Acad Dermatol. A summary of the subtypes of rosacea with the clinical features that characterize each subgroup. It also collects the initial data on possible etiologies and pathophysiology of rosacea. Rosacea shares genetic risk loci with several autoimmune diseases. A Danish case-control study of patients with rosacea and 33, matched controls demonstrates an association between female patients with rosacea and type 1 diabetes, celiac disease, multiple sclerosis, and rheumatoid arthritis. The association in men was significant for rheumatoid arthritis. A nationwide case-control study from Taiwan". A case-control study of 33, patients with rosacea and 67, age- and gender-matched control subjects demonstrate that patients with rosacea have an increased incidence of dyslipidemia. Hypertension and coronary artery disease is also associated. The incidence of peripheral arterial occlusive disease and cerebral infarction is increased in patients with rosacea but not statistically significant. Diabetes is not associated. Layton, A, Thiboutot, D. A review of low-dose antibiotics, beta-blockers, and antiparasitic agents for the treatment of rosacea. A retrospective study of patients treated with carbon dioxide laser for rhinophyma showing improvement with minimal side effects. Mansouri, Y, Goldenberg, G. A review of devices and topical agents available for rosacea including light and laser devices and topical alpha-adrenergic receptor agonists. A study of Irish patients with papulopustular rosacea showing a prevalence of approximately 2. UV radiation did not seem to play a role in prevalence in this population but it is unknown whether it worsens or affects the course of the disease. A review of the literature regarding the psychosocial and quality-of-life impact of rosacea was performed and revealed higher incidences of embarrassment, social anxiety, depression, and decreased quality of life in rosacea patients. Both therapies were effective and there was not a clear advantage to one or the other in terms of effectiveness. A therapeutic approach to rosacea with

a focus on individual therapies and the data that support or do not support their use in rosacea. A case-control study of 65 rosacea patients and 65 controls demonstrated that moderate to severe rosacea is associated with hyperlipidemia, hypertension, metabolic diseases, cardiovascular disease, and gastroesophageal disease. Additional associations with allergies, respiratory disease, other gastrointestinal diseases, urogenital diseases, and female hormone imbalance were suggested; these categories encompassed many diseases and further statistical analyses of individual diseases was not provided. This study demonstrates an increased incidence of migraines in patients with rosacea. It was also found that women with rosacea were affected by migraines more than men. They also note that ocular symptoms were commonly associated with rosacea but did not specifically correlate with migraines. A review of ocular rosacea with an overview of signs and symptoms and a therapeutic approach for the dermatologist. No sponsor or advertiser has participated in, approved or paid for the content provided by Decision Support in Medicine LLC.

Phymatous Rosacea is a common skin condition that may affect individuals of any age. However, it is generally seen in adults in the years' age range (commonly onset at age 30 years). A peak incidence is seen around 45 years Even though both males and females are affected, it is much more.

By vasoconstricting dermal blood vessels, they have been shown to decrease erythema and flushing in some rosacea patients. At this dose, there was no reduction in blood pressure, but lower baseline malar temperature may have been reduced by peripheral vasoconstriction. Although some patients do remarkably well on clonidine, responders are not clinically identifiable before treatment. Since control of this feature of rosacea is so difficult, a trial course may be indicated [4]. Both the flashlamp-pumped long-pulse dye laser 1, nm long and the potassium-titanyl-phosphate laser are used in the treatment of facial telangiectasia [4]. Rosacea treatment using the new-generation, high-energy, nm-long pulse-duration pulsed-dye laser improves rosacea with a very favorable safety profile, and less purpura than resulted from earlier-generation pulsed-dye laser. The new V-beam features provide ultra-long pulse duration at the target blood vessels. This reduces the purpura and can also treat the broken blood vessels associated with rosacea, which is more comfortable for patients [5]. The long-pulsed neodymium-doped yttrium aluminium garnet Nd: YAG laser is a safe and effective treatment for vascular and inflammatory lesions of rosacea [6]. Nonlaser intense pulsed light is safe and effective for the treatment of a vascular form of rosacea [7]. It is a noninvasive and nonablative treatment that uses high-intensity pulses of visible light to improve the appearance of the vascular lesions of rosacea. Intense pulsed light is a light pulse targeted at the red pigment in the blood which heats and destroys the pigment without affecting the skin or other tissues. Intense pulsed light nm is a safe and effective treatment for rosacea-associated erythema, especially for perilesional erythema [8]. Several recent reports demonstrate the possible action of botulinum toxin for facial erythema and flushing. Botulinum toxin works as a neuromodulator at the neuromuscular junction. Chemical denervation by botulinum toxin appears to interfere with normal acetylcholine signaling pathways and can provide symptomatic relief to patients with severe facial flushing. Intradermal botulinum toxin injection seems effective and almost a safe therapy for patients with refractory erythema it may rarely cause headache and may be considered a reasonable addition to the therapeutic options, especially when other established therapies have failed [9]. Papulopustular Rosacea The papulopustular subtype of rosacea is characterized by the persistent central facial erythema, in addition to inflammatory papules and pustules which are transient in nature. Efficacy of sodium sulfacetamide has been reported in papulopustular rosacea. It helps decrease inflammatory lesions and facial erythema. The most common adverse reactions include dryness, erythema, or irritation at the application site, which decrease in frequency over time [3]. It has been used as a topical treatment for rosacea for decades. Metronidazole has been effective in reducing erythema, papules, and pustules in multiple trials of patients with moderate to severe rosacea. Overall, topical application of metronidazole appears to be safe and well tolerated. Irritation and dermatitis are the most observed adverse reactions [10]. Once daily application of azeliac acid is effective and generally well tolerated. Irritation, dryness, and transient stinging and burning are the most observed adverse reactions [10]. It kills the Demodex mites that reside in the pilosebaceous units of patients with papulopustular rosacea. Inflammatory mechanisms appear to play a dominant role in the development of rosacea papules and pustules [11 , 12]. The most common adverse effects are irritation, xerosis, and burning. Topical retinoids have been shown to repair photo-damaged skin by promoting connective tissue remodeling and downregulation of Toll-like receptor 2 expression. It has been reported in multiple studies to clinically reduce erythema, papules and pustules, and telangiectasias, but with potential for irritation [13 , 14]. Topical calcineurin inhibitors are hypothesized to be beneficial in reducing rosacea symptoms because of their ability to inhibit T-cell activation, thereby preventing the release of proinflammatory cytokines. Calcineurin inhibitors have been used to treat papulopustular rosacea and erythema, and have led to significant improvement in erythema in open-label studies with potential for irritation [15]. This agent has the ability to treat cutaneous demodicosis as antiparasitic agent, and may have anti-inflammatory activity [17]. Systemic

Medications Tetracyclines have been the foundation of systemic rosacea therapy for decades. It has been proposed that the anti-inflammatory effects of tetracyclines are the main mechanism of action in reducing rosacea symptoms [3 , Oral metronidazole at a dose of mg twice a day has been shown to be effective in treating papulopustular rosacea, but has been associated with rare potential side effects such as neuropathy and seizures [19 , 20]. Isotretinoin may be useful in treating patients with severe, recalcitrant papulopustular rosacea by downregulating Toll-like receptor 2 expression. Although it has not been approved by the Food and Drug Administration for the treatment of rosacea, several studies have shown that oral isotretinoin dose ranges from 0. Blocking mast cell degranulation was therefore hypothesized to be a potential therapeutic target in rosacea [3 , 25]. Ocular Rosacea Ocular rosacea is an inflammation that causes redness, burning, photophobia, and itching of the eyes. It develops in people who have rosacea. Sometimes ocular rosacea is the first sign that may later develop into the facial type. Medication and a good eye care routine can help control the signs and symptoms. Avoiding makeup or using a noncomedogenic and free-fragrance products is recommended, in addition to avoiding triggers including hot and spicy foods, alcoholic beverages, and sunlight. Tetracyclines decrease bacterial lipase; therefore, they are effective in protecting the cornea from impending perforation secondary to inflammatory responses [26]. Topical cyclosporine is more effective than oral doxycycline. Clarithromycin and metronidazole have also shown efficacy in treating ocular rosacea. A pilot study found the topical compound to be safe and effective in treating eyelid involvement in ocular rosacea [28]. Phymatous Rosacea Phymatous rosacea is characterized by skin thickening, often resulting in an enlargement of the nose from excess tissue and overgrowth of sebaceous glands. It can also affect the chin or cheek as well as the forehead. Ignoring the signs of rosacea may lead to phymatous rosacea with a puffy look. This type of rosacea is very rare today, because many patients are more likely to have their rosacea treated early on. Oral Isotretinoin Oral isotretinoin 0. It appears to be an efficacious and well-tolerated option for the treatment of phymatous rosacea by significantly reducing facial cutaneous blood flow and the growth of sebaceous glands [29]. Surgical and Other Procedures for Treating Thick Skin Fortunately surgical procedures can help reshape the nose and bring the skin back to normal size by shaving off the extra layers of skin. CO2 Laser CO2 laser is the preferred and most common method of treating thickening skin - a powerful laser to shave down the bumps induced by thickening skin. This procedure causes the least amount of bleeding because the laser seals blood vessels as it works; however, by using the traditional fully ablative CO2 lasers, there is a risk of hypopigmentation and hyperpigmentation [30]. Light-Based Therapy Light-based therapy has had some good results, but it is not sufficient. Dermabrasion This technique involves using a wire brush to scrape off, or abrade, unwanted skin, but it can cause bleeding and there is the risk of cutting too deep, which can induce scarring and permanent color changes to the skin [30]. Electrocautery This procedure involves using a heated electrode to warm and scrape off excess skin to give it a smoother look, but it may cause bleeding. Care Plans Each phase of rosacea has its own management; however, treatment of all subtypes involves the following fig.

Chapter 7 : Update on the management of rosacea

In Part One of this three-part series on rosacea, we help you learn how to decode skin symptoms and determine your rosacea subtype. Knowledge is power, and getting to know your skin is the first step toward finding effective treatment options for symptoms of rosacea.

Diagnosis and treatment A treatment plan for rosacea generally includes avoiding triggers, using gentle skin care products, and treating the rosacea. How do dermatologists diagnose rosacea? No medical test can tell whether you have rosacea. To diagnose rosacea, your dermatologist will examine your skin and your eyes. Your dermatologist will also ask questions. Sometimes, another medical condition can look a lot like rosacea. Your dermatologist will want to rule out these conditions. Medical tests can help rule out conditions, such as lupus and an allergic skin reaction. If you have rosacea, your dermatologist can talk with you about treatment options. While treatment cannot cure rosacea, it can help: Reduce or eliminate signs of rosacea on your skin Ease your discomfort Prevent rosacea from worsening How do dermatologists treat rosacea? To give you the best results, treatment often begins with a bit of education. While medicine or laser treatment can help reduce or clear signs of rosacea, your everyday habits may cause a new flare-up. Learning how to do the following can help reduce flare-ups: Many things you do can cause rosacea to flare. These may “ or may not “ cause your rosacea to flare. People have different triggers. You can learn more about triggers and how to find them at: People who have rosacea often find that their skin is quite sensitive to the sun. Apply a broad-spectrum sunscreen with an SPF 30 or higher every day before you head outdoors Avoid the midday sun Seek shade when outdoors Slip on a wide-brimmed hat when outdoors to protect your face and neck from the sun Wear sun-protective clothing and sunglasses If sunscreen irritates your skin, try using one that contains only titanium oxide and zinc oxide. Practice rosacea friendly skin care. Many skin care products can irritate skin with rosacea. Some skin care habits, such as scrubbing your skin clean, can cause rosacea to flare. Using mild skin care products and being gentle with your skin can help prevent flare-ups. If you have trouble finding mild skin care products, ask your dermatologist for recommendations. The rest of your treatment plan will be tailored to treating your rosacea.

Chapter 8 : Rhinophyma (phymatous rosacea)

Rosacea is a chronic inflammatory skin condition associated with four distinct subtypes: erythematotelangiectatic, papulopustular, phymatous, and ocular. Rosacea is a chronic inflammatory disorder that affects 10% of the population. The prevalence of rosacea is highest among fair-skinned individuals.

What Are the Different Types of Rosacea? Up to 16 million Americans have a skin condition known as rosacea, which is typically characterized by consistent red facial flushing. Although we are still unsure of the exact causes of rosacea, we do know that there is likely a genetic component, it is associated with chronic inflammation, and there are four main subtypes of this condition. This type of rosacea is characterized by facial flushing and broken blood vessels, which are likely caused by years of dilating and constricting. You only need to apply it once in the morning for hour relief from redness. This breakthrough treatment is the first of its kind to directly address redness, rather than the pimple-like bumps caused by the second subtype of rosacea. Papulopustular or Acne-Like Rosacea Flushing and redness can also be present with papulopustular rosacea, but papules or acne-like bumps will also appear on top of redness. Other studies have shown an association with the microbiota bacteria in the gut. Additional research is still needed to uncover the exact cause of rosacea. Because the symptoms of papulopustular rosacea often closely resemble acne, it is important to find a top dermatologist in your area who can accurately assess and diagnose your skin. If you are diagnosed with rosacea, beginning treatment immediately can help to not only reduce your symptoms but may also prevent them from becoming more severe over time. Both of these treatments specifically target bumps and pimples associated with this kind of rosacea. Phymatous Rosacea Rosacea subtype 3 is characterized by thick, red skin that usually develops on the nose, but can also affect your chin, ears, forehead, and eyelids. Although rosacea in general is more common in fair-skinned women than in men, phymatous rosacea is most commonly seen in men. Sun protection, trigger avoidance, and a proper diagnosis and treatment from your dermatologist are the best ways to manage phymatous rosacea. As with other subtypes, catching it early on is crucial for minimizing symptoms. Ocular Rosacea Many people who struggle with red, burning, stinging, or uncomfortable eyes do not realize that they could have ocular rosacea. In many cases, this type of rosacea occurs in conjunction with subtype 1 "facial redness, flushing, and broken blood vessels. Sometimes, ocular rosacea develops before symptoms appear on your skin. Practicing good eye hygiene and working with your doctor to diagnose and treat the underlying cause can control your symptoms. However, there is currently no cure for rosacea. If you think you have any of these common symptoms of rosacea, see a doctor right away so you can get an accurate diagnosis. If you do have rosacea, early treatment can treat your symptoms and may help to prevent more severe symptoms from developing down the road. It is also important to avoid triggers that could cause your symptoms to flare up, including spicy foods, warm drinks like coffee and hot chocolate, sun exposure, and intense exercise. In Summary Although there is not currently a cure for rosacea, early detection and treatment can effectively manage this common condition. For this reason, it is important to see a doctor as soon as you notice symptoms of any of the four subtypes of rosacea.

Chapter 9 : Rosacea | American Academy of Dermatology

Phymatous rosacea: Skin thickens and has a bumpy texture. Ocular rosacea: Eyes red and irritated, eyelids can be swollen, and person may have what looks like a sty. With time, people who have rosacea often see permanent redness in the center of their face.