

IMPACT OF VITAMIN C TO MATURE FACIAL SKIN

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Abstract

Facial skin is one of the basic choices reflections of human quality life and lifestyle. In processes of human aging start skin changes: wrinkles are forming, there are seen changes of skin composition, firmness and moisture content, decreasing absorption of vitamins. Skin of all age groups face with variety of skin problems, causing negative impact on face beauty and brightness, what causes dissatisfaction of own appearance and variety of aesthetic problems. Another important problem occurring in mature age are pigment spots, what rises because of locally intensified melanogenesis, which depends on various factors - genetic, ultraviolet radiation, hormonal disorders, inflammation of skin, disorders of nervous regulatory mechanisms, deficiency of vitamin C. Therefore, skin problems require complex work of beauty therapists and clients dealing with facial skin problems. Cosmetics enriched with vitamin C can be used to solve facial skin problems, skin recovery, purification, pigmentation bleaching.

Aim of article – to determine impact of cosmetics enriched with vitamin C for mature facial skin. In cosmetology vitamin C helps to eliminate variety problems that are occurring in mature age and cause negative aesthetic appearance and psychological problems. This leads to the need to make investigations in this area, what could let to evaluate care of face skin with cosmetics enriched with vitamin C, solving facial skin problems.

*Investigations were carried out using cosmetics with biologically active substances. Monitored and recorded changes of facial skin before cosmetic procedures and after each of their performance. The study carried out case and comparative analysis. Results of investigation led to form **main conclusions**: cosmetic procedures with cosmetics enriched with vitamin C, are effective solving problems of mature skin. More effective these procedures are together with observed healthier lifestyle. Vitamin C ensure better resistance of skin, it's elasticity, moisture, firmness, colour uniformity, strengthens capillaries, reduces face skin irritations, brightens pigment spots.*

Keywords: Aging process; Facial skin problems; Mature facial skin; Vitamin C.

Background

Recently there is seen tendency that more and more women face with variety skin problems - skin darkening, capillary network manifestation, pigment spots. Impact of vitamin C to facial skin still is not investigated detail by Lithuanian researchers. Focus to this theme is only fragmentary. Most of the publications on this topic are unscientific nature, what reveals need of such kind researches. Lithuanian (Budginaitė, 2009; Paulauskaitė- Žalėnė, 2015) and foreign authors (Bjelakovic et al., 2013; Draelos, 2015; Farage, et al., 2013; Fracassetti et al., 2013; Gianeti et al., 2012; Goldfaden,

2009; Hunter et al., 2012; Kishimoto et al., 2013; Kunin et al., 2010; Lauer et al., 2013; Meinke et al., 2013; Michal, DiNardo 2014; Shai et al., 2009) examine effect of vitamin C facial skin in various aspects. Studies (Bauman et al., 2014; Chambial et al., 2013; Fan et al., 2012; Nisar et al., 2013; Oresajo et al., 2012; Padayatty, Levin, 2016; Rekha et al., 2012 ; Taylor et al. 2013; Telang, 2013) reveal benefits of vitamin C, it`s impact to skin, problems that cause deficiency of vitamin C. In this article are reviewed already performed theoretical researches about effects of vitamin C to facial skin, when skin faces with challenges and to carry out individual case studies for purpose scientifically substantiate investigation phenomenon. *Research problem:* what impact to facial skin makes beauty therapist, performing procedures with cosmetics enriched with vitamin C.

Aim of article – to determine impact of cosmetics enriched with vitamin C for mature facial skin.

Object of article – impact of vitamin C for mature facial skin.

Methods: literature review, case study, comparative analysis.

Theoretical framework - requirement and impact of vitamin C for mature facial skin

Natural skin changes are natural processes that began in fairly young age. Aging makes changes in epidermis and derma (in papillary and network circles) biologically. There is seen dehydration processes because of reducing hyaluronic acid, changes of skin structure, reduce of it`s brightness and formless and a lot of other changes. Therefore, biological aging cannot be slowed down, unlike photo aging (Budginaitė, 2009). In authors` opinion, everyone should pay attention to its facial skin, its evaluation and continuous improvement of cosmetics and cosmetic procedures. Vitamin C is one of material, which creates conditions to slow down aging process, revitalize skin, brighten it, correct pigmentation spots, stimulate synthesis of collagen, and strengthen blood vessels.

Facial skin is ultimate reflection of person's life. Unlike other areas of body skin, facial skin is the place that is constantly faced with environment, is vulnerable to external factors acting (Kunčiuvienė, 2009, p. 476). Skin consists of epidermis, derma and subcutaneous layers. The top protective skin layer is epidermis; underneath it is derma, which consists of cellular elements of fiber substance and extracellular tissues. In the derma there are fibroblasts, which are responsible for synthesis of protein - collagen (material for skin strength), elastin (fibbers that give elasticity to the skin) and hyaluronic acid. After derma is membrane (Kunin et al., 2010, p. 119). Among epidermis and derma is basal membrane - through it useful materials fall to skin and harmful materials are removed. Over time, membrane structure becomes uneven: in some places it is thin and loose, in other - a multi-layered or quite dense. These changes are result of metabolic disorder, although it may be caused by long-term effects of different toxins. Nutrient that are necessary for skin come from derma to epidermis by aid of intercellular cords vesicles - during particular bubbles that are formed in cell membranes. In the aging

process number of such bubbles is decreasing, what means that skin nourishment becomes insufficient and it's appearance is deteriorating (Kalibatiené et al., 2012, p. 13). In author's opinion, in mature (and other age groups) facial skin may expose problems that rise is connected with variety of factors, such as aging, genetics, inappropriate lifestyle and so on. There are awarded four major skin problems - dry skin, skin fatness, acne and unhealthy skin (Beloglavkiené 2013; Michal, DiNardo 2014, p. 24).

In aging process mature skin is structure and face profile picture are changing. In such skin structure is observed decrease of elasticity and firmness, dryness, and in some cases peeling (Shai et al., 2009, p. 5). Mature skin loses its purity, radiance, these is observed cobweb of dilated capillaries. In the context of aging processes are weakening functions of fat and sweat glands, what disrupts water and lipid balance in the skin, decreasing enzyme activity, and this leads to slow down of metabolic processes (Farage, et al., 2013, p. 12). Main signs of mature skin are changes of skin colour, loss of elasticity, loss of moisture and tone, skin relaxation, dryness, pigmentation spots and other signs that reveal human maturity (Farage, et al., 2013, p. 6; Kalibatiené et al., 2012 p. 17; Kunin et al., 2010, p. 119; Taylor et al., 2013, p. 45; Draelos, 2015, p. 107). In authors opinion, each person's skin condition is individual, and therefore it's changes are not unanimous.

Vitamin C is known since ancient times for its positive effects on skin. In ancient times, Indians moisturized and healed skin with vitamin C. Vitamin C provides rejuvenating effect on the skin, improves collagen synthesis in the skin, slow aging process, and protect skin from free radical damage (Fan et al. 2012, p. 4111). Vitamin C is necessary for efficient operation of connective tissue (Chambial et al., 2013, p. 315). In the natural nature vitamin C is natural antioxidant. Most plants and animals can synthesize vitamin C from glucose (Telang 2013, p. 143). Vitamin C is low molecular weight antioxidant that is synthesized in the human organism. This vitamin is obtained with food (Padayatty, Levine, 2016.). Human body absorbs vitamin C from natural sources (Telang 2013, p. 143). Lauer et al. (2013, p. 148), Rekha et al. (2012, p. 304) studies showed, that consumption of vitamin C is required for everybody in daily life. Day amount of this vitamin is at least 100 mg. As pointed out Hunter et al. (2012, p. 1236), regular consumption of vitamin C and required it's amount stimulates production of antibodies in blood plasma and protects body from various infections.

Vitamin C is strong reducing agent, which carries significant role in the fight against oxidative processes. Vitamin C creates stabilizing impact, what has positive effect on facial skin reducing wrinkles, protecting skin from adverse environmental effects (Lauer et al. 2013, p. 148). Vitamin C is ascorbic acid, which is very important for human skin, because this vitamin exhibits biological activity of skin (Hunter et al. 2012, p. 1237). Ascorbic acid is biologically active, so this vitamin is needed for skin as a preventive factor protecting healthy skin and blood vessels from adverse environmental effects. Vitamin C acts as an endogenous antioxidant establishing primary security barrier for the skin (Rekha et al., 2012, p. 304; Telang et al., 2013, p. 144). In addition, vitamin C has strong antioxidant

features (Fracassetti et al., 2013, p. 579). Vitamin C stimulates collagen production in the skin, is strong antioxidant that helps to rejuvenate skin and correct its problems.

Clinical studies showed that vitamin C promotes collagen formation and reduces negative impact of free radicals and helps to maintain strong and youthful skin (Goldfaden, 2009), promotes tissue regeneration and renewal (Fan et al. 2012, p. 4112). Vitamin C promote skin regeneration processes, e.g. slows down wrinkle formation processes, improve skin texture, increase its tone, act as an antioxidant that provide protection from the sun (Baumann et al. 2014, p. 1210).

Vitamin C is required for facial skin in order to maintain beautiful, youthful skin, improve its regeneration, enhance tissue recovery options, to stop aging process, and improve skin tone (Shai et al., 2009, p. 32; Telang 2013, p. 144). Vitamin C positively act on the skin creating nitrogen oxides protection against their harmful effects of free radicals, rejuvenates and purifies skin, stimulates cell regeneration, improves capillary patency and strengthens their walls, promotes tissue regeneration, collagen synthesis, amino acids, carbohydrates, fat and other materials metabolism (Telang et al. 2013, p. 144; Shai et al., 2009, p. 33; Gianea et al. 2012, p. 2219; Oresajo et al. 2012, p. 253; Fracassetti et al. 2013, p. 579). In authors opinion, vitamin C has great importance to the skin and its preservation. This vitamin is making overall positive impact on both – for skin and all body condition.

Main problems of aging of skin are changes of elasticity, moisture failure, weakening tone, changes of skin colour (Lauer et al. 2013, p. 148). In author's opinion, one of the reasons for such problems rise, is deficiency of vitamin C. This is because intake of vitamin C in the body is decreasing of its intake level lack, for variety negative environmental influences, lifestyle (stress, alcohol consumption, smoking, fever, viral disease, drugs, pollution, etc.) (Chambial et al. 2013, p. 315 Padayatty, Levine, 2016; Taylor et al., 2013, p. 46). Deficiency of vitamin C might highlight such skin problems as acne, photo aging, rosacea, and cause problems of pigmentation (Hunter et al. 2012, p. 1236). It causes skin capillaries weakening, reduces skin regenerative process, suppress melanin production, greyness of skin, yellowish hue, reduce collagen synthesis, rises skin dryness problems, loss of skin elasticity and firmness, reduced skin protection from wrinkle formation, increased probability of free radical negative impact to skin (Meinke et al. 2013, p. 366). Deficiency of vitamin C reduces vitality of skin, is worsening appropriation of oxygen (Gianetti et al. 2012, p. 2220; Meinke et al. 2013, p. 367). In authors' opinion, deficiency of vitamin C can be observed studying every human face. Facial skin problems in mature age caused because of vitamin C deficiency are obvious. Vitamin C is one of the materials that can adjust certain skin problems. To eliminate them there is a need for constant and continuous supervision of skin at home and in beauty therapist cabinet.

One of the most effective treatments for mature and pigmented skin is vitamin C. These procedures moisturizes, nourishes, whitens and tightens skin, slow signs of aging, correct pigmentation spots, improve skin firmness and elasticity (Kishimoto et al. 2013, p. 580; Nisar et al., 2013, p. 160). Cosmetics enriched with vitamin C helps to adjust mature skin from exposing problems (Bjelakovic et

al., 2013). Such cosmetics help to soothe skin, improve its vitality, strengthen and moisten it, restoring normal epidermal lipid levels (Lauer et al., 2013, p. 152). In authors` opinion, correction of facial skin problems might be solved using cosmetics, which extracts contain vitamin C, enzymes, nucleic and amino acids, steroids and minerals that slow down processes of skin aging, promote tissue growth, are correcting wrinkles and improving cell regeneration.

Clinical studies (Gianeti et al. 2012, p. 2220) showed, that cosmetics containing vitamin C improve skin situation, slow down aging process, refreshes and purifies skin, stimulate collagen synthesis, accelerate tissue regeneration, and strengthen blood vessels. Using cosmetics and making cosmetic procedures might solved skin problems that are caused by vitamin C deficiency, slow photo ageing (as opposed to biological aging, which cannot be influenced) (Budginaitė, 2009). Performing cosmetic procedures with vitamin C, it is possible to deal with problems of mature and pigmented skin (Draelos et al. 2015, p. 106). However, only course of procedures is not enough. To achieve desired effect there is required healthy life style (physical activity, healthy diet), required continuous use of appropriate cosmetics at home, that cell-building and regeneration process could be carried out continuously (Bjelakovic et al. 2013).

In authors` opinion, solving mature and pigmented skin problems there is a need for constant maintenance at home and cosmetology cabinet, because this process is complex and requires a lot of attention to correct facial skin problems caused by vitamin C deficiency. Temporary care solving these problems is not enough. It must be continuous, on-going process. There is a range of corrective techniques by beauty therapist and at home for solvation of mature and pigmented skin problems - cosmetic and dermatological procedures, complex (systemic) procedures and individual daily supervision. Performing procedures of facial skin correction in cosmetology cabinet can be used variety of cosmetics enriched with vitamin C. Independently from their use and selected methodology, cosmetics enriched with vitamin C act as natural antioxidant, increase level of collagen production and connect free radicals.

Summarizing theoretical insights of Lithuanian and foreign authors' it is noted, that skin of each human respond it`s health, lifestyle and life experiences. Everyone seeks to stay young longer and to reduce obvious changes in the face skin that is result of aging and environmental stress. Therefore, skin aging, darkening, pigment spots are intricately controlled processes. In order to reduce such negative impact, there is a need to use special cosmetics at home and to visit beauty therapists, trying to eliminate or at least to correct these problems. Vitamin C is one of the most important factors that can improve skin condition, resolve or at least reduce some skin problems. Vitamin C whitens, moisturizes and nourishes skin, creates conditions for collagen production in the body, which helps skin stay elastic longer, improves blood circulation, helps to reduce negative effects of stress, removes heavy metals from the body, reduces various diseases probability, helps body absorb iron from fruits and vegetables, and strengthens immune system. This vitamin refreshes and brightens skin, whitens

pigmentation spots, accelerates tissue regeneration and collagen synthesis, which strengthens skin. Meanwhile, deficiency of vitamin C causes skin problems that occur in skin dryness, loss of elasticity, elucidation of pigment spots.

Methodology

Sample

Exploring vitamin C impact solving problems of mature facial skin, there were used to methods - analysis of case study and comparative analysis. Research was carried out in March 15 - May 19 2016. Study was conducted by choosing three 29-35 years old research participants that were selected by target selection way, using comfortable selection principle. Research participants were clients of beauty and aesthetics studio that have mature and problematic facial skin.

Investigation was based by the aim of research, appropriate chosen women in the age group 29-35, that facial skin is mature and problematic, within the purpose to evaluate different problems and their changes after corrections doing cosmetic procedures with cosmetics enriched with vitamin C. Procedural plans were set up for each study participant.

Methods

In the study there were used comparative analysis and case analysis study methods. Comparative analysis method was used comparing results obtained during the investigation – changes of study participants` facial skin after performed procedures course. Case study analysis method was used performing cosmetic procedures and analysing changes of study participants` facial skin before, through and after procedures course.

In the investigation time there were performed 10 procedures with cosmetics enriched with vitamin C for each participant. Cosmetic procedures were performed in every 7 days, according to predetermined schedule. The study was conducted in Kaunas, beauty and aesthetics studio.

Tools

For investigation was chosen line of cosmetics, enriched with vitamin C. These products are rich in vitamin C: it consists advanced active and stable derivatives, including ester C and magnesium ascorbic phosphate, which promote bleaching process, neutralize free radicals, stimulate skin renewal and provide youthfulness and vitality. Completed procedures are evaluated on the basis of pre-prepared assessment scales (Paulauskaitė- Žalėnė, 2015, p. 85 „Z. Obagi system of normal skin condition assessment“) (see Table 1).

Table 1

Scales of study participants facial skin assessment and criteria by Z. Obagi system of normal skin condition assessment

Assessment scale	Assessment criteria
1. Up to 7 – skin condition is bad/poor.	1. Skin smoothness (1 – bad/poor, 2 - average, 3 - good).
2. From 7 to 11 – skin condition is average.	2. Skin strength (1 – bad/poor, 2 - average, 3 - good).
3. From 12 to 15 – skin condition is good.	3. Uniformity of colour (1 – bad/poor, 2 - average, 3 - good).
	4. Absence of disease symptoms (1 – bad/poor, 2 - average, 3 - good).
	5. Skin texture (1 – bad/poor, 2 - average, 3 - good).

Facial skin of each study participant is evaluated (Table 1) by assessment scale and by set assessment criteria before and after course of procedures.

Ethics

Study is based on ethical provision without prejudice of study participants' rights (Žydzīnaitė, 2008): study participants were involved in investigation voluntarily, agreed to participate in the study with written permission, study participants got misleading information about investigation, study aims were presented to them and clarified course of procedures. Study participants were informed about course of investigation, possibilities to assess and to analyse results of investigation.

Study participants agreed to be photographed and accepted the fact that their photos will be published officially in published scientific article by signing written permission. Study diminish dignity of study participants, does not damage their privacy, anonymity, survey participants were treated fairly and respectfully, research participants didn't felt any physical pain, stress, negative emotions, study is complied with the laws and conventions that protect human rights.

Findings

Before making cosmetic procedures all study participants facial skin condition was rated as average (see table 2). After ten procedures course there were observed obvious positive changes in facial skin of study participants' (see Figures No. 1, 2, 3). Examination of study participant's No. 1 facial skin before procedures course showed, that study participant's No. 1 facial skin is irritated, dehydrated (in the fields of cheeks and chin), there are seen pigment spots on forehead, chin and around mouth, skin colour changed (see Figure 1).



Authors of photos: J. Jocienė, & I. Vainorė

Figure 1. Study participant No. 1 facial skin condition before procedures course and changes after done 10 procedures with cosmetics enriched with vitamin C course

After 10 procedures course here are seen changes of study participant No. 1 facial skin: decreased irritation of facial skin, skin was nourished and moisturized, disappeared drying in cheeks and chin field, decreased pigmentation brightness around lips, chin and forehead areas. Examination of study participant's No. 2 facial skin before procedures course showed, that study participant's No. 2 facial skin is extremely irritated, very dehydrated, seen dandruff in cheeks field, very dilated capillary network, monitored continuous flushing, which intensifies from any external stimulation, pigment spots are bright in forehead and around the mouth. Facial skin is greyed (see Figure 2).

After 10 procedures' course here are seen changes in study participant No. 2 facial skin. At first study participant felt that negative feelings in facial skin decreased. Facial skin was nourished and moisturized (at least temporarily), flushing is not such active and non-permanent as it was. Skin dryness reduced to minimum, disappeared dandruff in cheeks field, skin is more elastic, stronger capillary network. Pigment spots remained in forehead and around lips, but spots are less bright. After performed cosmetic procedures course study participants No. 2 facial skin situation was improved generally, skin acquired healthier appearance, became brighter. Examination of study participant's No. 3 facial skin before procedures course showed, that study participant's No. 3 facial skin is irritated, very dehydrated, there is seen loss of skin elasticity and radiance, dilated capillary network, redness is occurring constantly, seen pigment spots in forehead, along hair line (see Figure 3).



Authors of photos: J. Jocienė, & I. Vainorė

Figure 2. Study participant No. 2 facial skin condition before procedures course and changes after done 10 procedures with cosmetics enriched with vitamin C course

After done 10 procedures course participant`s No. 3 facial skin was nourished, moisturized, irritation in facial skin disappeared, dilated capillaries, pigmentation spots in forehead are not so bright as it was before the procedure course. It should be noted that after procedure improved skin elasticity, skin colour is lighter.

Before investigation performance and after 10 procedures course were evaluated each study participant`s skin condition, identifying problems of mature skin by Z. Obagi system of normal skin condition assessment (Paulauskaitė – Žalėnė, 2015, p. 82) (see Table 2).

Overall assessment of study participants facial skin changes showed, that condition of all participants facial skin become better, it`s assessment changed from 3 to 4 points: condition of study participants facial skin before procedure course was assessed as average and after procedures course changed to good. Such study results allow to state, that cosmetic products, enriched with vitamin C has beneficial positive effects on mature facial skin, correct various skin problems.



Authors of photos: J. Jocienė, & I. Vainorė

Figure 3. Study participant No. 3 facial skin condition before procedures course and changes after done 10 procedures with cosmetics enriched with vitamin C course

Table 2

Evaluation of study participants' facial skin by Z. Obagi system of normal skin condition assessment before and after cosmetic procedures course

Study participant	Before procedure course	After procedure course	Detailed assessment
No. 1	10 (average)	13 (good)	1. Skin smoothness: before -2 (average), after - 3 (good). 2. Skin strength: before - 2 (average), after - 2 (average) 3. Uniformity of colour: before - 1 (bad/poor), after - 2 (average). 4. Absence of disease symptoms: before - 3 (god), after - 3 (good) 5. Skin texture: before - 2 (average), after - 3 (good).
No. 2	9 (average)	12 (good)	1. Skin smoothness: before -2 (average), after - 2 (average). 2. Skin strength: before - 1 (bad/poor), after - 2 (average) 3. Uniformity of colour: before - 1 (bad/poor), after - 2 (average). 4. Absence of disease symptoms: before - 3 (god), after - 3 (good) 5. Skin texture: before - 2 (average), after - 3 (good).
No. 3	8 (average)	12 (good)	1. Skin smoothness: before -2 (average), after - 3(good). 2. Skin strength: before - 1 (bad/poor), after - 2 (average) 3. Uniformity of colour: before - 1 (bad/poor), after - 2 (average). 4. Absence of disease symptoms: before - 3 (god), after - 3 (good) 5. Skin texture: before - 1 (bad/poor), after - 2 (average).

Discussion

Interviewing study participants prior to, during, and after investigation showed that study participants are very satisfied because of changes in their facial skin, what has helped them to improve both – their better appearance and quality of life. This suggests, that facial aesthetic view, overall skin condition changed after cosmetic procedures course, what create conditions for person to feel better and more confident when he shines outside as well as inside. After procedure course all study participants indicated, that there is seen improvement not only in their facial aesthetic appearance, but also in their own emotional condition. Comparing facial skin changes of three study participants it has to be noted that all their facial skin problems have been corrected, although to effective full problems (e.g. pigmented spots) correction and removal it is necessary to make more professional procedure courses, required laser procedures. The best impact of procedures course observed in facial skin is facial skin of study participant`s No. 1, the lowest impact – on study participant`s No. 3 facial skin. Most serious facial skin problems detected analysing skin of study participant No. 2. Such conclusion was done because of extreme skin dehydration. Procedure course for the latter participant has the biggest impact, although all facial skin problems were not solved. During the investigation and after it neither of study participants have any negative consequences, cosmetics did not cause allergies.

Comparing results of investigation and case studies it can be said, that reached results didn`t solved facial skin problems essentially, but corrected them, although not all survey participants expected such results. It is assumed that facial skin problems is connected to study participants inappropriate way of life: drinking alcohol disrupts blood flow, blood vessels become apparent, skin loses moisture and gets active continuous flushing; facial skin because of smoking becomes pale and greyed, loses its shining; overexposure in the sun stimulates elucidation of pigment spots.

Another important aspect is that study participants pay too little attention to professional skin care and skin care at home. They visit beauty therapist cabinet relatively rarely (except study participant No. 3), and procedures that they are ordering possibly are not that, which could help study participants to solve or correct their facial skin problems.

Conducted three case studies showed that cosmetics enriched with vitamin C can correct appropriate skin problems, to hydrate skin, improve its elasticity, reduce irritation, reduce elucidation of pigmentation, give skin radiance and restore natural colour. Aesthetic facial image of study participants` has been improved after done investigation (ten procedure course).

Limitations. Considered study limitation is that investigation is not total, because there was made investigation in which were assessed three study participants – women that agreed to take part in the investigation. However, despite the latter restriction, study results enable to analyse impact and efficiency on facial skin of cosmetic products enriched with vitamin C and how it works, solving or correcting different facial skin problems.

Impact. Relevance of this topic is determined because of the need to assess changes of women facial skin using cosmetics enriched with vitamin C. Facial skin faces with various problems that causes aesthetic and psychological problems, that is why there is a need to make such investigations that could help to assess impact of cosmetic enriched with vitamin C, solving mature facial skin problems. Study is relevant and useful for anyone facing with different mature skin problems occurrence in aging period. Study is also actual and useful for beauty therapists, cosmetologists, students studying beauty therapy and all those who are interested in woman's face skin changes in aging period, causes of different problems, pigment spots rise and possible ways to correct such problems using cosmetics.

Conclusions

Vitamin C is necessary material for facial skin, because it creates protection against negative factors, it helps to strengthen skin, increase its elasticity, moisture, tone, brighten skin, slow aging process, strengthen blood vessels, etc. Deficiency of vitamin C causes skin problems: photo aging, pigmentation, acne, rosacea, weakening of skin capillaries, reduces regenerative process of skin, suppress melanin production, greyness, yellowish, reduce collagen synthesis, skin dryness, loss of elasticity, firmness and vitality, forming and revealing of wrinkles, skin is not protected from free radicals, impairing oxygen uptake processes.

Case studies and comparative analysis allow to formulate following conclusions: done 10 cosmetic procedure course using professional cosmetics, enriched with vitamin C, had positive impact to all study participants facial skin condition, e. g., facial skin become more equal, elastic, firmer, improved skin moisture content and texture, skin colour become lighter, gained purity, decreased brightness of pigment spots, enhanced capillary network, disappeared dryness in cheeks field. Correcting such facial problems as skin irritation, dryness, discoloration, tone loss, pigmentation spots, dilated capillary network, permanent redness, can be used cosmetic products, enriched with vitamin C makes that makes possible to adjust appropriate skin problems, hydrate skin, improve its elasticity, reduce irritation, reduce pigmentation elucidation, give skin radiance and restore original colour, improve overall aesthetic facial image.

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