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THE EFFECT OF THE PHENOMENON OF IRRADIATION ON THE VISUAL PERCEPTION OF AESTHETIC RESTORATION

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Abstract
The features of visual assessment of the color, shape and size of objects related to the physiological and psychological mechanisms of visual perception are described and analyzed. Clinical examples of the use of the phenomenon of the predominance of vertical size over horizontal in the visual perception of figures with blurred contours created by a wide transparent layer are given. It is emphasized that the dentist's knowledge of the sources of visual illusion formation allows the doctor to minimize errors and complications in the manufacture of structures that play an important role in aesthetic dentistry. Aesthetic dentistry opens up broader perspectives To improve medical skills and improve the quality of work. At the same time, the ability to evaluate and reproduce the optimal shape and size, And the color characteristics of teeth are an important requirement for dentists, dental technicians, and physician assistants. Common mistakes when choosing a shade of color or determining the size Absence is associated with one of the main important dental problems. Knowledge in the field of formation and color perception of the surrounding world. Special medical knowledge from the section of anatomy and physiology.Vision, as well as the psychology of visual sensations, allow you to choose.Optimal conditions for the organization of the workplace and the choice of color shades At the same time eliminating aesthetic flaws.

Keywords: aesthetic dentistry, color assessment, vision, visual illusion, modeling of aesthetic restoration.

Introduction

The features of visual assessment of the color, shape and size of objects depend on the physiological and psychological mechanisms of visual perception. When choosing a shade of color and modeling aesthetic restoration, the dentist's task is complicated by a number of optical illusions, the functional basis of which is primary analysis (eye receptors react) and analytical and synthetic activity of the brain block of the analytical apparatus. As a result of orientation and study of the senses, a perceptual image is formed, as close as possible to objective reality, as a criterion of activity. Thus, the perception of the real size and shape of an object is a long process of combined exposure to visual, tactile and musculoskeletal sensations. The system of perceptual

behavior can be mastered only in the course of purposeful practical exercises. The content and nature of the perception of objects depend on attitudes, differences in experience, interests and the general orientation of the individual. As a result, the specific image of the visual plan differs from those that differ in their originality. In some cases, instead of an objective image, a person perceives the object as he wants or is offered to him. The influence of a person's experience, interests, amount of knowledge, objectivity or expediency of behavior on the content of perception is called perception. 1. This is one of the most important characteristics characterizing a person's individual attitude to an object, a subjective assessment of reality. The peculiarities of visual perception of color and shape are the interaction of the background with objects (contrast, reflection, continuous image), the influence of lighting (chiaroscuro, metamerism) and the perception of spatial parameters (irradiation). The illusion of size, shape and volume is shown in the following example: of two rectangles of the same width, the lower rectangle looks wider (Fig. 1). 1). This position is also true for teeth (Fig. 1). 2). The fabric in the transverse stripe turns out to be more dense, and the longitudinal stripes create the appearance of a thinner figure. This is because most people exaggerate the vertical line compared to the horizontal one. The illusion that the vertical dimension prevails over the horizontal one is shown in Figure 1.3. It seems that its height is greater than its width, since the vertical outlines of the figure are blurred. A white circle with clear outlines on the background of a square looks larger than the same circle with fuzzy outlines (Fig. 1). 4). Illusions of volume and shape can arise in the presence of a contrast of color shades: warm colors (yellow-orange) seem prominent, cold (blue) - deep; the bright ones come out, the dark ones are removed. A visible change in shape or size depending on color or brightness is called irradiation. Thus, it seems that the white spots are larger than the dark ones. This. As shown in Figure 5, bright areas are visually perceived as protruding, and dark areas are perceived as smoothed (radiation phenomenon). The phenomenon of changing the size and shape of the surface depending on color and brightness leads to the fact that light areas, including teeth and restorations, are perceived as larger. Warm tones create the illusion of bulges – they protrude forward. Light tones create the same effect as warm ones, while dark tones recede into the background, giving way to cold ones. As a result, the design of light and warm tones is perceived as voluminous, large and protruding. Bluish teeth look flat and are located in the mouth (Fig. 1). 6). The use of yellowish light shades in the central part and the use of cold gray-blue tones in the proximal part and on the cutting edge gives volume and convexity to the structure (veneer, crown). Knowledge of the source (appearance) of the formation of illusions allows the dentist to minimize

errors and complications. in the manufacture of structures that play an important role in aesthetic dentistry, while using the mechanism of illusory perception of objects, this not only improves the quality, but also reduces the degree of invasiveness (readiness) of exposure, expands the possibilities of repair techniques and makes it possible to reproduce the individual features of the tooth structure. We give a clinical example of the use of the phenomenon that in the visual perception of shapes with blurred contours created by a wide transparent layer, the vertical size prevails over the horizontal one. Clinical example The presence of a wide gap between the central incisors (diastema) leaves the dentist the right to choose the shade of color, type of transparency, optimal size and shape (Fig. 1). 7). Mechanical cleaning of all tooth surfaces from plaque is carried out. To choose the shade of the composite, you need to compare the cutting edge of the tooth with the nearest standard, in the same way as the neck area and the equatorial area, as well as the side of the tooth, are evaluated. Each time, the reference tooth is selected until its shade completely matches a certain segment of the patient's teeth. The opaque (OA2) Grandio (VOCO) composite was chosen to fill the main volume of the restoration (Fig. 1). 8). This material combines the quality of composite materials with innovations in the field of nanotechnology.It contains 87% inorganic filler in a methacrylic matrix, cures under the light of a halogen lamp, fills cavities of all classes, creates faces, tabs and overlays and, as shown, corrects the color and shape of teeth. The dentin layer is covered with enamel of the appropriate color (A2). A wide zone (up to 1.0 mm) of transparent composite is formed on the mesial surface. When choosing a tooth shade, the effect of radiation is taken into account. In this case, the blurred boundaries of a wide transparent layer and opaque zones on the surface of close relatives will create the illusion of reducing the width of the incisors. The medical records indicate the shade and the expected changes in volume parameters.An increase in mesiodistal dimensions, a change in the geometric shape of the crown from rectangular to square. Minimal preparation of the 11th and 21st teeth is carried out: on the vestibular surface from the midline to the near rim, an enamel bevel is made, masking the transition of the tooth into the filling, the entire near "interested" surface of the central incisors is treated with fine-grained diamond boron, washed with water. with a stream of water and dried it. The next stage of creating an aesthetic restoration (using adhesive systems) is carried out in accordance with the instructions. Complete etching of the prepared enamel and dentin with bokosid acid gel is carried out for 15 seconds on dentin and 30 seconds on enamel (Fig. 1). 9). Teeth are thoroughly washed with a jet of water and dried with a jet of low-fat air (15-20 seconds). Using a brush, the glue is applied in a thin layer, carefully rubbed into the prepared surface, blown with a jet of air and cured with a halogen

lamp. A layer of the Grandio Flow fluid material is applied (Fig. 1). 10). After photopolymerization, restoration modeling begins. The first part of the opaque material (OA2) is applied with a medium-sized iron to the proximal edge of the 11th tooth in the equatorial region, smoothed from the center to the periphery and "wrapped" on the prepared surface (Fig. 11). It cures under the light of a halogen lamp. The second part is applied in the same way. In the vestibular area of the tooth, opac is applied in a thin layer so that it overlaps the border of the transparent area, and the enamel layer occupies such a volume that it is 0.5 mm on the vestibular surface and 1.0 mm on the almost central wall, and then an opaque base is formed on the 21st tooth in the same way (Fig. 1). 12). Individual macro- and microreliefs are modeled by shades of enamel (A2 and A1): the shape of the cutting edge approaches a straight line, the back contour is not distal, and the transparent layer (I) covers an opaque layer and a layer of tinting enamel up to 0.5 mm thick.The width of the transparent layer on the proximal surface is 1.0 mm.Restorative treatment (removal of the hybrid layer, contour strengthening, polishing) and coating of teeth with difluoride 12 are carried out in the usual way

To conclude: The use of the illusion of perception of size and shape in the design allows you to minimize the invasiveness of the impact (reduce the volume of dental preparation).

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