



# International Journal of Homoeopathic Sciences

E-ISSN: 2616-4493

P-ISSN: 2616-4485

IJHS 2019; 3(3): 77-81

Received: 07-05-2019

Accepted: 09-06-2019

**Dr. Atul Kumar Singh**

Principal- Dr. MPK

Homoeopathic Medical

College, (Under Homoeopathy

University), Saipura, Sanganer

Jaipur, Rajasthan, India

**Dr. Ruchi Singh**

Associate Professor,

Department of Organon of

Medicine and Homoeopathic

Philosophy, Dr. MPK

Homoeopathic Medical

College, (Under Homoeopathy

University), Saipura,

Sanganer, Jaipur, Rajasthan.

India

**Dr. Himani Choudhary**

MD Scholar Part-II,

Department of Organon of

Medicine and Homoeopathic

Philosophy, Dr. MPK

Homoeopathic Medical

College, (Under Homoeopathy

University), Saipura, Sanganer

Jaipur, Rajasthan, India

**Dr. Ravindra Singh Kuntal**

MD Scholar Part-II,

Department of Organon of

Medicine and Homoeopathic

Philosophy, Dr. MPK

Homoeopathic Medical

College, (Under Homoeopathy

University), Saipura, Sanganer

Jaipur, Rajasthan, India

**Correspondence**

**Dr. Ruchi Singh**

Associate Professor,

Department of Organon of

Medicine and Homoeopathic

Philosophy, Dr. MPK

Homoeopathic Medical

College, (Under Homoeopathy

University), Saipura, Sanganer,

Jaipur, Rajasthan, India

## Computer vision syndrome: A literature review of causes, symptoms and potential homoeopathic medicines

**Dr. Atul Kumar Singh, Dr. Ruchi Singh, Dr. Himani Choudhary and Dr. Ravindra Singh Kuntal**

### Abstract

Computer vision syndrome also known as digital eye syndrome is a widely prevalent but often undiagnosed epidemic. Persistent use of visual display terminals like computers, smart phones, tablets e-readers etc. are an inherent component of modern lifestyle. Small screens, small text sizes, glare and other accompanying postural factors predispose to development of symptoms including eyestrain, dryness of eyes, redness, watering, blurred vision etc. Patients with preexisting eye disorders suffer even more. Behavioural modification including posture, viewing distance and workplace ergonomics play a very important role in managing the symptoms. In this literature review repertories were searched for rubrics related to computer vision syndrome keeping the causative and aggravating factors in perspective. In addition, the differentiating characteristics of some medicines have been enlisted from materia medica to enable judicious selection of indicated homoeopathic medicine.

**Keywords:** Computer vision syndrome, homoeopathic medicines, digital eye syndrome

### Introduction

Computer vision syndrome (CVS) also known as "digital eye syndrome" includes the complex of eye and vision problems related to near work experienced during use of visual display terminals (VDTs) like computers, tablets, phones, e book readers etc. Common presenting symptoms in these patients include ocular discomfort, visual problems, headache, tiredness, irritation of eyes, dryness of eyes, redness, heaviness, watering muscular strain, eyestrain, redness, blurred vision, and double vision associated with computer use. Asthenopia (eye strain) is a major complaint in subjects with CVS. External symptoms, related to dry eye include burning, irritation, ocular dryness and tearing. Internal symptoms, generally caused by refractive, accommodative or vergence anomalies include eyestrain, headache, eye ache, and diplopia and blur [1-5].

Current lifestyle exposes to early and continued exposure to computers, smart phones, tablets etc. making many individuals of all age groups susceptible to its development. However, the symptoms of CVS are common to many other individuals in other highly visually demanding occupations who report similar vision related problems. However, certain additional factors increase the prevalence of CVS [1-4].

In a hospital-based prospective, observational, descriptive study using "Specific Computer Users Questionnaire" regarding the visual symptoms 89%,87%,78%,77%,71%and 68% reported eye strain, burning eyes, neck, shoulder, or back pain, dryness, irritation and redness of eyes, headaches during or after working on computer and overall body fatigue respectively [6].

Another cross-sectional study questionnaire based study reported severe problems of vision in students that continuous especially in those who are using computers and similar devices for a long duration [7].

Cross sectional study among the software professionals have reported by 83.5% prevalence of vision related problems in study subjects [8]. A 2008 questionnaire based study of over 400 computer operators in India revealed asthenopic symptoms in 46.3% of subjects [9].

Similar symptoms have been reported in children after computer/smart phone/tablets etc. use. However, age association of asthenopia during computer use is still unclear [4, 10-12]. The prevalence of CVS seems to be higher in females [13-17].

**Contributing factors:** Many ocular factors like uncorrected vision conditions and accommodative spasms; and/or extraocular factors like workplace ergonomics (Lighting,

glare etc) and computer design can contribute significantly to development of CVS related symptoms. However, the major contributor to computer vision syndrome symptoms by far appears to be dry eye [3-4].

**Ocular factors:** Preexisting uncorrected refractive error, astigmatism, presbyopia and binocular vision (eye coordination and eye focusing), inappropriate oculomotor responses and dry eye problems can be major contributing factors to computer related eye stress [1-4].

- Uncorrected refractive error- Spherical hyperopia and high myopia should be corrected to reduce the ocular stimulus to accommodation and minimize blur [4].
- **Astigmatism:** Astigmatism is a common vision condition that causes blurred vision due to irregularly shaped cornea or curvature of the lens leading to eye discomfort and headaches. It frequently occurs along with other errors of refraction like myopia (near sightedness) and hypermetropia (farsightedness) and significantly contributes to increase in symptoms in CVS. The residual uncorrected astigmatism also produces a significant increase in symptoms during the computer task [1-4].
- Presbyopia, age related normal loss of near focusing ability of eye, can make viewing digital screens for a prolonged period of time troublesome. Viewing distance and gaze angle can be contributing factors in these cases.
- Inappropriate ocular responses
- Accommodative problems may occur as a result of the eyes' focusing system "locking in" to a particular target distance. In some cases, this may cause accommodation spasm<sup>[10]</sup>
- Inaccurate accommodative response (AR) during the computer task or a failure to relax the AR fully following the near-vision demands can contribute to blurred vision. An increased lag of accommodation in subjects with higher discomfort, which became manifest with extended viewing has also been reported [4].
- Effect of computer use on ability to converge and diverge appropriately is still unclear [11].
- **Dry eye:** Dry eye is a major contributing factor towards development of CVS. Environmental factors like low ambient humidity, high forced-air heating or air conditioning settings or the use of ventilation fans, excess static electricity or airborne contaminants can produce corneal drying. Reduced blink rate and incomplete blinking also contributes to dry eye. Wearing contact lens has been shown to alter the blink rate significantly. The prevalence of dry eye increases with age and is higher in women than men [1, 4]. Dry eye was associated with CVS in 58% in right eye and 55% in left eye according to-Tear film break up time measurement whereas 59% students have dry eye in right eye and 57% students have dry eye in left eye according to Schimer's test-I measurement [12].

**Extraocular factors:** Workplace ergonomics (equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort) plays a very important role in reducing discomfort and alleviating symptoms.

- Risk of CVS is increased due to poor seating posture, improper viewing distances, improper viewing angle and poor lighting. While working on smartphones, ebook readers and tablets; text sizes and relatively small screens may necessitate close working distances. In addition, text sizes also increase the demands placed upon ocular accommodation and vergence when compared with printed materials. The proposed commonly adopted working distances, with mobile (cell) phones and e-books, desktop computers and televisions are '1, 2, 10' ft (30 cm, 60 cm and 3 m respectively) respectively [4].
- **Lighting:** Light reflected from the computer screen can produce a veil of light over portions of the screen reducing contrast and visibility of the display characters. It can also form disturbing reflections of nearby or distant objects [4, 8].
- Background intensity, glare and reflection cause difficulty in viewing. Thus, to focus on these characters and sustain the focusing are very difficult for eyes which creates fatigue and related symptoms in the eyes. Symptoms are reported more in people who did not use anti-glare glasses [8].

### Symptoms

Clinical presentation depends on visual demands in relation to visual abilities. Also, it is important to identify whether the reported symptoms are specific to computer usage, or are a result of performing a sustained near-vision task for an extended period of time. In addition identifying underlying disorders is also important.

Ocular symptoms of CVS include internal ocular symptoms of tired eyes, strain and ache; and external ocular symptoms of dryness, irritation, burning and redness; visual symptoms of blurred vision, double vision. Extra ocular symptoms are musculoskeletal symptoms presenting with neck and shoulder pain [3-6, 8, 10-18].

### Diagnosis

Depends upon the symptoms reported by the patients and a complete ocular surface examination to rule out local and systemic features. Local features to be identified include blepharitis, inflammation, lid margin disease and significant aqueous deficiency with basal or Schirmer test (an objective measure of the lacrimal secretory capacity) 1 [19, 20].

For assessment of symptomatology Computer Vision Syndrome Questionnaire (CVS-Q©) is a validated instrument with good psychometric properties developed to measure the Computer Visual Syndrome (CVS) in workers exposed to video display terminals (VDTs) [21-22].

**Complications:** When a person stare at a computer screen the blinking rate decreases by more than 60%, such an acute decrease in blinks can acutely aggravate symptoms of Dry eye syndrome (DES) or keratoconjunctivitis sicca (KCS) [20].

Near work with visual display terminal (VDTs) also results in a small, temporary myopic shift [20].

### Management

Treatment involves a multidirectional approach. The visual complaints associated with Computer Vision Syndrome or Digital Eye Strain can be prevented and reduced with taking some preventions. General management should be aimed at

achieving optimal workplace adjustments like proper lighting, anti-glare filters, and suitable positioning of computer monitor and regular work breaks to help improve visual comfort. In addition, advising optimal distance and text size for viewing along with lubricating eye drops and special computer glasses also help to relieve symptoms [1-4, 20].

### Homoeopathic medicines

Homoeopathic medicine selection is based on characteristic symptoms. The common symptoms of computer vision syndrome overlap with many other disorders of the eye. The key differentiating factor therefore is the history of use of computers, smart phones e-readers etc. where artificial light, glare, strain from reading and dryness of eyes become important differentiating factors. A review of repertories was conducted to find the causative/aggravating symptoms and related medicines to help to narrow search of homoeopathic similimum. Some relevant rubrics found in repertories are as follows:

#### Kent's Repertory [22]

- **Kent, Eye, Dryness, artificial light, in:** Ars, pic-ac.
- **Kent, Eye, Dryness: looking at bright light:** Mang.
- **Kent, Eye, Dryness reading:** Aur, cina, graph, hyos, nat-m.

#### Pain

- **Exertion of vision, from:** Bar-c., Bry, calc., canth., carb-v., *chel.*, ign., *mang.*, mur-ac., naja., Nat-m., *nux-m.*, *phyt*, plat, *psor*, *puls.*, *rhus-t*, Ruta, sil, *spig*, *staph*.
- **Fine work:** Carb-v., coloc, *con.*, *jab*, merc, mur-ac, *nat-m*, Ruta, seneg, sulph.
- **light: artificial:** Calc-p., calc., carb-an., *chel.*, cina., croc., ip., *lith.*, lyc., mang., nat-a., *nat-m.*, nux-v., petr., pic-ac., plat., sars., *seneg.*, sep., *staph*.
- **Light, strong:** Asar, com., *hep*, *mang*, nat-a., petr., phos, pic-ac., ruta, *sil*, *sulph*, thuj.
- **Looking, when steadily:** *Apis*, *ars*, *arund*, carb-v., *caust*, *chel*, cina, nat-a., nat-c., Nat-m., plat., *psor*. *Rhus-t.*, ruta, *seneg*.
- **Reading:** Agar., alum., amm., *apis.*, *arg-n.*, *arn.*, *ars-i.*, ars-m., *ars.*, asar., aur., bap., *bry.*, calc-p., calc., cann-i., caust., cic., Con., Dulc., *echi.*, ign., *jab.*, kali-ar., *kali-c.*, *kali-p.*, *lac-c.*, *lac-d.*, *lach.*, lact-ac., *lith*. *mang.*, merc., *merl.*, mur-ac., *nat-a.*, nat-c., Nat-m., nat-p., nat-s., nit-ac., *nux-v.*, ol-j., olnd., *onos.*, petr., phel., *phos.*, phys., *phyt.*, pic-ac., *puls.*, *rhod.*, Ruta. sars, *seneg*. Sep., *staph*. sulph., thuj.
- **Strained, as if:** Mez, Ruta.
- **Using (See Reading):** *Arg-n.*, *arn calc.*, carb-v., con., *lach*, *merl.*, Nat-m., *nux-v.*, phos., Ruta., *staph*.

#### Repertory by Oscar E. Boericke [23]

- Eyes,
- Eyeballs, Electric or artificial light, bad effects from-Glon, Jabor.
- eyeballs,
- Glare of fire, bad effects from - Acon, Canth, Glon, Merc.
- eyeballs,

Sightseeing, moving pictures, bad effects from- Arn.  
RETINA, Congestion Light, artificial, brilliant [from] -- Glon.

### A synoptic key of the materia by boger [24].

Conditions of Aggravation and Amelioration:  
Light, artificial, firelight, etc., agg.: Bell., Calc-c., Con., Dros., *Euphr.*, Glo., Lyc., Merc., Nat-m., Pho., Sep., *Stram*.  
Light, bright, bright objects, etc., agg. *Bell.*, *Stram*.  
Bœnninghausen's Characteristics Materia Medica & Repertory. By C. M. Boger, M.D.<sup>25</sup>

#### Aggravation

**Eyestrain:** BELL, Calc., Carb-v., *Croc*, Kali-c., NAT-M., Phos, Ruta, Sil, Spig.

**Light, Artificial:** Calc., Calc-p., Carb-an., *Cina*, *Croc.*, Dros., EUPHR., Graph., Hep., Lach., *Laur.*, *Lyc.*, Mag-m., Mang., Merc., Mez., Nat-s., Nux-m., Petr., *Ph-ac.*, *Phos.*, Phyt., Plat., Podo., PULS., Ruta, Sars., Seneg., SEP., Sulph.

#### Looking

**Continued looking, at an object:** Rheum, Ruta.

**Intently, closely:** Anac., Aur., Bar-c., Calc., Canth., Carb-v., Chel., Cina, *Croc.*, Dros., Graph., Kreos., Lach., Laur., Lyc., Merc., Nat-m., Petr., *Phos.*, *Plat.*, Ran-b., Rhod., Rhus-t., Ruta, Seneg., Spong., Staph., Stront., Sul-ac., Sulph., Valer.

**Reading:** Agar., Agn., Alum., Ang., Asar., CALC., Canth., Carb-v., Cic., *Cina*, Coff., *Con.*, *Croc.*, Dros., *Dulc.*, Graph., Ign., Kali-c., LACH., Lil-t., Lith-c., *Lyc.*, Mez., Nat-c., Nat-m., Nit-ac., *Olnd.*, Petr., *Ph-ac.*, Phos., *Puls.*, *Rhod.*, RUTA, Sars., *Seneg*. SEP., SIL, Sul-ac., *Sulph*, Valer.

**By light:** Calc., Cina, Mang, Mez, Nux-m.  
Repertory of Hering's Guiding Symptoms of our Materia Medica by Calvin B. Knerr, M. D [26].  
EYES.

#### Accommodation,

**Weakened, from overexerting eyes:** Nux-v.  
Looking, on, at near objects, must close them, worse when looking at a near light (asthenopia): Mang.

#### Eyes

**Aching:** Looking, on, at near objects, must close them, worse when looking at a near light (asthenopia): Mang.

**Reading, when:** *Dulc*, Jab, Ruta.

Vision, in and over, with blurring of, after using eyes and straining them at fine work: RUTA.

These medicines should be differentiated with reference to materia medica. Key eye symptom indicators of the most commonly indicated medicines are [27, 28]

1. **Asarum europium:** Feel stiff; burn; feel cold. When reading, sensation in eyes as if they would be pressed asunder. Cannot read with left eye, aggravated by bright light. Asthenopia, accompanied by congestive headaches; eyes < morning and evening, when out-doors in heat and sunlight ;> in middle of day and by bathing them in cold water. Painful feeling of dryness in eye. Better, in cold air or water; worse, sunlight and wind.
2. **Agaricus muscarius Dim sight:** focal distance changes while reading, first grows shorter then longer; things

- look obscured as from turbid water; muscae volitantes; vibrating spectra; with vertigo. Reads with difficulty, type seems to move. Muscular asthenopia, with weakness of internal recti, and consequent inability to keep eyes fixed on reading (vanishing of sight), with pain around eyes, soreness of balls, twitchings and jerkings of balls and lids.
3. **Argentum nitricum:** Intolerance of light. Want of accommodation. Sight failed for near objects, everything appeared blurred or indistinct.  $\theta$  Paralysis of accommodation.
  4. **Conium maculatum:** Photophobia and excessive lachrymation. Dim-sighted; worse, artificial light.
  5. **Euphrasia officinalis:** The eyes water all the time. Pressure in eyes.
  6. **Jaborandi:** Eye strain from whatever cause. Dim vision, twitching of lids and pain in eyeballs. Eyes tire easily and are irritable, especially on moving. Headache upon using eyes; smarting and pain in globes.  
**Kali-Carbonicum:** Stitches in eyes. Spots, gauze, and black points before eyes. Swelling over upper lid, like little bags. Asthenopia. Weak sight from excessive sexual indulgence. On shutting eyes, painful sensation of light penetrating the brain.
  7. **Manganum aceticum:** Short sighted. Asthenopia, with aching pains in eyes on looking at near objects, so must close them; < when looking at a near light. Dim-sightedness during day. Pressure in eyes when reading by candlelight. Burning heat and dryness of eyes.
  8. **Natrum muriaticum:** Burning in eyes. Give out on reading or writing. Asthenopia due to insufficiency of internal recti muscles (Gels and Cup acet, when due to external muscles).
  9. **Nux-vomica:** Paresis of ocular muscles. Photophobia; much worse in morning. Smarting dry sensation in inner canthi.
  10. **Phosporicum-Acidum:** Pain as if eyeballs were forcibly pressed together and into head.
  11. **Phosphorus:** Patient sees better by shading eyes with hand. Fatigue of eyes and head even without much use of eyes. Retinal trouble with lights and hallucination of vision.
  12. **Ruta:** Eyes-strain followed by headache. Eyes red, hot, and painful from sewing or reading fine print (Nat mur; Arg nit). Disturbances of accommodation. Weary pain while reading. Pressure deep in orbits. Tarsal cartilage feels bruised. Pressure over eyebrow. Asthenopia. Vision very weak, as if eyes were excessively strained. Objects seem dim before eyes, as if a shadow were flitting before them. Letters seem to run together. Amblyopia: dependent upon overexertion of eyes, or anomalies of refraction; from writing by artificial light; fine needlework, etc. in a weaver, could with difficulty distinguish one thread from another, and could not read at all. mistiness of sight, with complete obscuration at a distance. Asthenopia: irritability of every tissue of eye from overwork or from using eyes on fine work; heat and aching in and over eyes, eyes feel like balls of fire at night, blurring of vision, letters seem to run together, lachrymation, etc. Asthenopia; more often indicated in weakness of ciliary muscles than of internal recti. Burning in eyes in evening, especially when trying to sew or read; eyes feel strained; read too much by artificial light. Green halo around light in

evening. Pressure deep in orbits. Pain as from a bruise in orbicular cartilages. Pressure on inner surface of left eye, with profuse lachrymation. Eyes feel hot like balls of fire. Eyes water in open air, not indoors.

13. **Sepia:** Muscular asthenopia; black spots in the field of vision; asthenic inflammations, and in connection with uterine trouble. Aggravation of eye troubles morning and evening. Tarsal tumors. Ptosis, ciliary irritation. Venous congestion of the fundus.
14. **Staphysagria:** Heat in eyeballs, dims spectacles. Recurrent styes. Chalazæ (Platanus). Eyes sunken, with blue rings. Margin of lids itch. Affections of angles of eye, particularly the inner. Lacerated or incised wounds of cornea. Bursting pain.
15. **Tabacum:** Dim sight; sees as through a veil; strabismus. Amaurosis; muscae volitantes. Central scotoma. Rapid blindness without lesion, followed by venous hyperæmia and atrophy of optic nerve.

### Conclusion

Computer vision syndrome is a widely spread condition across all age groups. Use of smartphones, computers, tablets etc predisposes a vast majority of the population to this developing this condition. Education and awareness of predisposing factors and appropriate recommended behavioural changes in handling of these devices for long intervals will help in preventing and managing symptoms of ocular discomfort. In addition using indicated homoeopathic medicine can play a major role in alleviating symptoms. Indicated homoeopathic medicines can play a beneficial role in countering the effects of eyestrain due to glare, improper lighting and continuous work. The role of these medicines should be further explored in clinical studies.

### References

1. Aoaorg. 2019. [online] Available at: <https://www.aoa.org/Documents/optometrists/effects-of-computer-use.pdf> [Accessed 10 Mar. 2019].
2. Gurram Murali. Computer Vision Syndrome. Health. 2013; 90:30-33.
3. Clayton Blehm, Seema Vishnu, Ashbala Khattak, Shrabane Mitra, Richard W Yee. Computer Vision Syndrome: A Review. 2005; 50(3):253-262. [https://www.surveyophthalmol.com/article/S0039-6257\(05\)00009-3/abstract](https://www.surveyophthalmol.com/article/S0039-6257(05)00009-3/abstract)
4. Rosenfield M. Computer vision syndrome: a review of ocular causes and potential treatments. Ophthalmic Physiol Opt. 2011; 31:502-515. doi: 10.1111/j.1475-1313.2011.00834.
5. Sheedy JE, Hayes J, Engle J. Is all asthenopia the same? Optom Vis Sci. 2003; 80:732-739.
6. Basnet Anjila, Basnet Pragya, Karki Poojyashree, Shrestha Shriraj. Computer Vision Syndrome Prevalence and Associated Factors among the Medical Student in Kist Medical College. Nepalese Medical Journal. 1. 29. 10.3126/nmj.v1i1.20396, 2018.
7. H Al, Rashidi Sultan. Alhumaidan H. Computer vision syndrome prevalence, knowledge and associated factors among Saudi Arabia University Students: Is it a serious problem?. International Journal of Health Sciences. 2017; 11:17-19.
8. Soumya Harapanahalli Venkatesh1, Anita T Girish1, Shashikala, Praveen Kulkarni3, Snigdha Mannava4,

- Rajendra Rajarathnam<sup>5</sup> Computer Vision Syndrome at the Workplace International Journal of Contemporary Medical Research.
9. Bhanderi DJ, Choudharg S, Doshi VG. A community based study of asthenopia in computer operators. *Indian J Ophthalmol.* 2008; 56:51-55.
  10. Barar A, Apatachioaie ID, Apatachioaie C, Marceanu-Brasov L. Ophthalmologist and computer vision syndrome. *Oftalmologia.* 2007; 51:104-109.
  11. Dain SJ, McCarthy AK, Chan-Ling T. Symptoms in VDU operators. *Am J Optom Physiol Opt.* 1988; 65:162-167.
  12. Hayes JR, Sheedy JE, Stelmack JA, Heaney CA. Computer use, symptoms, and quality of life. *Optom Vis Sci.* 2007; 84:738-744.
  13. Wiholm C, Richter H, Mathiassen SE, Toomingas A. Associations between eyestrain and neck-shoulder symptoms among call-center operators. *SJWEH Suppl.* 2007; 3:54-59.
  14. Taino G, Ferrari M, Mestad IJ, Fabris F, Imbriani M. Asthenopia and work at video display terminals: study of 191 workers exposed to the risk by administration of a standardized questionnaire and ophthalmologic evaluation. *G Ital med Lav Ergon.* 2006; 28:487-497.
  15. Iwakiri K, Mori I, Sotoyama M *et al.* Survey on visual and musculoskeletal symptoms in VDT workers. *Sangyo Eiseigaku Zasshi.* 2004; 46:21-212.
  16. Salibello C, Nilsen E. Is there a typical VDT patient? A demographic analysis. *J Am Optom Assoc.* 1995; 66:479-483.
  17. Shima M, Nitta Y, Iwasaki A, Adachi M. Investigation of subjective symptoms among visual display terminal users and their affecting factors—analysis using log-linear models. *Nippon Eiseigaku Zasshi.* 1993; 47:1032-1040.
  18. Gowrisankaran, Sowjanya. Sheedy, James E. Computer vision syndrome: A review. *Work.* 2015; 52(2):303-314.
  19. Azurin D, Versaci A. Eyelid Reconstruction. *Plastic Surgery Secrets Plus.* 2010, 388-394.
  20. Gupta S. Computer Vision Syndrome | National Health Portal of India [Internet]. *Nhp.gov.in.* 2016. [cited 6 March 2019]. Available from: <https://www.nhp.gov.in/disease/eye-ophthalmology-/computer-vision-syndrome>
  21. Seguí M, Cabrero-García J, Crespo A, Verdú J, Ronda E. A reliable and valid questionnaire was developed to measure computer vision syndrome at the workplace. *Journal of Clinical Epidemiology.* 2015; 68(6):662-673.
  22. Kent's Repertory Presented by Médi-T. [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>
  23. Repertory by Oscar E. Boericke, Presented by Médi-T [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>
  24. A Synoptic Key of the Materia Medica by Cyrus Maxwell Boger Presented by Médi-T [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>
  25. 25 Bøenninghausen's Characteristics Materia Medica & Repertory. By CM. Boger, M.D. Presented by Médi-T. [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>
  26. The Guiding Symptoms of Our Materia Medica by Constantine Hering, M.D. +Repertory by Calvin B. Knerr, [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>
  27. Homœopathic Materia Medica by William Boericke, [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>
  28. The Guiding Symptoms of Our Materia Medica by Constantine Hering, [Internet]. *Homeoint.org.* [cited 10 March 2019]. Available from: <http://www.homeoint.org/hering/index.htm>