

Appendix 3. Description of the patient reported outcome instruments used in refractive error.

SN	Name of the PRO/Author (Year)/Developed using Classical test theory (CTT) or Item response theory (IRT)	Concept/s measured/Study population (Country; Refractive error or correction)	No of domains (total items)/Types of domains (no of Items)	Item wordings (examples)	Response categories wordings (examples)
A. Refractive error-specific patient reported outcome (PRO) instruments					
1	National Eye Institute Refractive Quality of Life (NEI RQL)/Berry ²⁴ and Hays ³⁰ (2003)/CTT	Quality of life/USA; All types of refractive error including Presbyopia; Spectacles, Contact lenses, Refractive surgery	13 Subscales (42)/Clarity of vision(4), Expectations (2), Near vision (4), Far vision (5), Diurnal fluctuations (2), Activity limitations (4), Glare (2), Symptoms (7), Dependence on correction (4), Worry (2), Suboptimal correction (2), Appearance (3), Satisfaction with correction (1)	<ul style="list-style-type: none"> - At this time, how clear is your vision using the correction you normally use, including glasses, contact lenses, a magnifier, surgery, or nothing at all? - If you had perfect vision without glasses, contact lenses, or any other type of vision correction, how different would your life be? - How much difficulty do you have reading ordinary print in newspapers? - How often are you bothered by changes in the clarity of your vision over the course of the day? - Are there daily activities that you would like to do, but don't do because of your vision or the type of vision correction you have? - How much does dryness in your eyes bother you? 	<ul style="list-style-type: none"> - Perfectly clear, Pretty clear, Somewhat clear, Not clear at all; - No difference, Small difference for the better, Large difference for the better, I have this already - No difficulty at all, A little difficulty, Moderate difficulty, A lot of difficulty, Never try to do these activities because of vision, Never do these activities because of other reasons - Never, Rarely, Occasionally, Sometimes, All of the time - Yes, many; Yes, a few; No - Don't have dryness; Not at all; Very little; Moderately; Quite a lot; A lot <i>[16 types of response categories]</i>
2	Refractive Status and Vision Profile (RSVP-42)/Schein ⁶⁰ and Vitale ¹⁷ (2000)/CTT	Quality of life/USA; Myopia, Hyperopia; Spectacles, Contact lenses, Refractive surgery	8 subscales (42)/Concerns (6), Driving (3), Expectations(2), physical/social functioning (11), symptoms(5), optical problems(5), glare(3), problems with corrective lenses (7)	<ul style="list-style-type: none"> - I worry about my vision (check only 1): - During the past month, how much difficulties have you had with each activity, using these types of corrections? - During the past month, how bothered have you been by each of the following things, using these types of corrections? - During the past month, how bothered have you been with each of the following? 	<ul style="list-style-type: none"> - Never (1), Rarely (2), Sometimes (3), Often (4), Always (5) - Not applicable (0), No difficulty at all (1), A little difficulty (2), Moderate difficulty (3), Severe difficulty (4), So much difficulty that I did not do the activity with this type of correction (5), Never did the activity for other reasons (not related to vision) (6); - Not applicable (0), No trouble at all (1), Moderate trouble (2), A little trouble (3), Severe trouble (4), So much trouble that I did not do the activity with this type of correction (5) <i>[4 types of response categories]</i>
2.2	Refractive Status and Vision Profile (RSVP-20)/Garamendi (2005) ⁵⁸ /CTT	Quality of life/UK; Myopia: <i>[Refractive surgery clinic and general optometric practice]</i>	NR	Same as above	Same as above

3	Quality of Life Impact of Refractive Correction (QIRC)/Pesudovs (2004) ²⁹ /IRT	Quality of Life/UK; All types of refractive error except presbyopia; Spectacles, Contact lenses, Refractive surgery	6 domains (20)/Activity limitation, Health concerns, Well-being, Convenience, Symptoms, Economic issues	<ul style="list-style-type: none"> - How much difficulty do you have driving in glare conditions? - How much trouble is with your spectacles or contact lenses when you wear them when using a gym/ doing keep-fit classes/ circuit training etc.? - How concerned are you about having to increasingly rely on your spectacles or contact lenses since you started to wear them? - During the last month, how much of the time have you felt able to do the things you want to do? 	<ul style="list-style-type: none"> - None at all; A little bit; A moderate; A lot; So much that I can't do this activity - A little bit; A moderate amount; Quite - None, A little bit, A moderate amount, Quite a lot, Extreme - Not at all, A little bit, A moderate amount, Quite a lot, Extremely - Never, Occasionally, Fairly often, Very often, Always <p><i>[5 types of response categories]</i></p>
4	Quality Of Vision (QoV-30)/McAlinden (2010) ²⁰ /IRT	Visual symptoms/UK; Spectacles and Contact lenses, Refractive surgery	3 Subscales for 10 symptoms (30)/Frequency (10), Severity (10), Bothersome (10)	<ul style="list-style-type: none"> - How often do you experience glare? - How severe is the glare? - How bothersome is the glare? 	<ul style="list-style-type: none"> - Never (0), Occasionally (1), Quite often (2), Very often (3) - Not at all (0), Mild (1), Moderate (2), Severe (3): - Not at all (0), A little (1), Quite (2), Very (3) <p><i>[Three types of response categories for frequency, severity and bothersome]</i></p>
5	Canadian Refractive Surgery Research Group Quality of Vision Questionnaire (QVQ)/Brunette (2000) ⁷⁴ , ⁷⁵ /CTT	Activity limitation, Symptoms, Health concerns, Emotional well-being/Canada; Patients who underwent bilateral PRK [†] for Myopia	7 Scales (41 questions; 66 items)/Global satisfaction (11), Quality of vision without correction (11), Quality of vision with correction (11), Quality of night vision (14), Glare (13), Daytime driving(2) and Night driving (4)	<ul style="list-style-type: none"> - Following the operation, I believe my main goal was achieved. - As compared to before the operation, my night vision is --- <p><i>[Two groups of statements: 1. Patient satisfaction and symptoms, and 2. Status after surgery as compared to that before surgery]</i></p>	<ul style="list-style-type: none"> - Completely disagree (1), Somewhat disagree (2), Don't know (3), Somewhat agree (4), Completely agree (5) - Much worse (1), Slightly worse (2), The same (3), Slightly better (4), Much better (5) <p><i>[Bipolar response formats]</i></p>
6	Prospective Evaluation of Radial Keratotomy (PERK) Study Questionnaire/Bourque (1986) ⁷⁸ /CTT	Health concerns, Visual symptoms, Emotional well-being/USA; Myopic patients who had radial keratotomy	3 indices (16)/Satisfaction (10), fluctuations in vision(4) and glare (2)	<ul style="list-style-type: none"> - I see as well as anybody. - Since surgery, my vision in both eyes has been the same regardless of the time of day. - I have a lot of trouble with glare in the eye that had surgery. 	<ul style="list-style-type: none"> 1 (Strongly agree) to 7 (Strongly disagree) <p><i>[Bipolar answer format]</i></p>
7	Institute for Eye Research Multidimensional Quality of Life for Myopia (MQLM)/Erickson (2004) ⁸⁰ /CTT	Symptoms, Emotional well-being, Activity limitation/Australia; Myopia; Spectacles, Contact lenses and LASIK [‡]	5 factors (45)/Symptom tolerance (13), Symptom frequency (13), Health proneness (10), Extraversion/Introversion (6), Cosmesis (3)	NR-Items reported but question formats not reported	<ul style="list-style-type: none"> - Wouldn't notice (1), Could tolerate (2), Somewhat bothered (3), Very bothered (4) - Rarely (1), Sometimes (2), Often (3), Constantly (4) - Strongly agree (1), Agree (2), Disagree (3), Strongly Disagree (4) <p><i>[Three types of response categories]</i></p>
8	Myopia-specific Quality of Life Questionnaire (MQLQ)/Lee (2005) ⁸⁰ /CTT	Symptoms, Activity limitation, Health concerns/South	4 domains (34)/ Visual function (11), Visual symptoms (12), Social and	NR-Items reported but question formats not reported	<ul style="list-style-type: none"> - Scale ranging from 1 (maximal dysfunction) to 5 (minimal dysfunction)

		Korea; Myopia; LASIK	role function (5), Psychological well-being (6)		
9	Subjective Vision Questionnaire (SVQ)/Fraenkel (2004) ⁸⁴ /CTT	Activity limitation and Visual symptom/Australia; Myopia and Myopic astigmatism; pre and post LASIK	6 factors (24)/ Driving (9), Glare and lighting (4) Ease with Rx (2), Near vision (3) Bothersome (3), Ghost image/ haloes/starburst (3)	<ul style="list-style-type: none"> - To what degree does your vision interfere with night driving? - How well can you read grocery store prices? - What percentage of time are you bothered by fluctuations in vision? - To what degree are you bothered by glare? <i>[Six types of question formats]</i>	Visual analogue scale: 0 to 100; labelled in 20s intervals (descriptors)
10	Visual Function and Quality of Life (VFQOL-16)/Brady (2010) ⁵ /IRT	Activity limitation, Emotional well-being, Symptoms/Urban India; Refractive errors; Uncorrected	3 strata (16)/Perception (4), Symptoms (3), Activity (9)	<ul style="list-style-type: none"> - Please respond to the questions as they apply to you over the past 4 weeks (Statements e.g. 'I worry about my vision') - We are interested in whether you experienced certain problems with your eyes or vision over the past 4 weeks (e.g. Glare) - We are interested in whether your vision caused you any difficulty with some common activities during the past 4 weeks (e.g. doing your work) 	<ul style="list-style-type: none"> - Never, Rarely, Sometimes, Always - No trouble at all, A little trouble, Moderate to severe trouble, So much trouble I had to rest my eyes - No difficulty at all, A little difficulty, Moderate to Severe difficulty, So much difficulty I did not do the activity
11	Contact Lens Impact on Quality of Life (CLIQ)/Pesudovs (2006) ⁸⁷ /IRT	Quality of life/UK; Pre-Presbyopic Contact lens wearers	6 domains (28 items)/ Activity limitation (2), symptoms (visual/ocular surface) (3), health concerns(6), Convenience (5), Well-being(9), Economic issues (3)	<ul style="list-style-type: none"> - How much difficulty do you have --- driving in glare condition? - During the past month how often have you experienced...fluctuating vision? - How much trouble is --- the routine care of your contact lens? - How concerned are you about medical complications from your contact lenses? - How concerned are you about the cost of your next contact lens? - During the past month, how much of the time have you felt happy when wearing CL? 	<ul style="list-style-type: none"> - None at all, A little bit, A moderate, A lot, So much that I can't do this activity - Never, Occasionally, Fairly often, Very often, Always - A little bit, A moderate amount, Quite a lot, Extreme - None, A little bit, A moderate amount, Quite a lot, Extremely <i>[Three types of response categories]</i>
12.1	Student Refractive Error and Eyeglass Questionnaire (SREEQ-38)/Crescioni (2014) ⁸⁸ /IRT	Quality of life/USA; Myopia and Myopic astigmatism, Mixed astigmatism & Hyperopia; Spectacle wearers	2 Parts (38)/Part A (15): Perceptions regarding uncorrected vision; Part B (23): Vision related QoL with spectacle correction B	<ul style="list-style-type: none"> - When I don't wear my glasses, I have problems seeing clearly. - When I don't wear my glasses, I am able to see clearly far away. - When I don't wear glasses, my schoolwork is harder to do. - When I wear glasses, I have problems seeing clearly. - I like my frames. <i>[Statements]</i>	<ul style="list-style-type: none"> - All of the Time, Most of the Time, Some of the Time, None of the Time - Very Much, Somewhat, A little Bit, Not at All <i>[Two types of response categories]</i>
12.2	Student Refractive Error and Eyeglass Questionnaire (SREEQ-R) /Crescioni (2014) ⁸⁸ /IRT	Same as above	2 Parts (20)/Part A (10): Perceptions regarding uncorrected vision,	<ul style="list-style-type: none"> -When I (don't) wear glasses, I have problems seeing clearly. -When I (don't) wear my glasses, my vision is very clear. 	<ul style="list-style-type: none"> - All of the time, Most/Some of the time, None of the time <i>[For 10 matched items]</i>

			Part B(10): VRQoL with spectacle correction B	-When I (don't) wear my glasses, I have to squint to see things clearly. <i>[Statements for 10 matched items]</i>	
13.1	Refractive Error Quality of Life Scale (REQ-Thai - 87)/Sukhawarn (2011) ⁹⁰ /CTT	Quality of Life/Thailand; Emmetropes, People with refractive error; Spectacles, Contact lenses, Refractive surgery	6 Dimensions (87)/Quality of Vision (8), Visual function (39), Social function (9), psychological function (11), symptoms (6), and Refractive correction problems (14)	NR - Question formats not reported	- Not bother or very little negative feeling or do not have difficulty in doing activity (1) to Have a great deal of symptoms or a great deal of negative feeling or a great deal of difficulty (7) - No symptom or do not have negative feeling or do not do this activity, Not important at all (1) to A very great deal of importance (7) <i>[Two types of response categories [Part A (amount of problem) and Part B (Importance of problem)]; 7 point rating scale converted into 5 point rating scale because of very rare responses in the extreme side of the scale]</i>
13.2	Refractive Error Quality of Life Scale-Short form (REQ-Thai-48)/Sukhawarn (2011) ⁹⁰ /CTT	Quality of Life/Thailand; Myopia emmetropia, hyperopia; Spectacles, Contact lenses, Refractive surgery	6 Dimensions (48)/Quality of Vision (6), Visual function (20), Social function (6), psychological function (6), symptoms (3), Refractive correction problems (7)	Same as above	Same as above
14	The Freedom from Glasses Value Scale (FGVS)/Levy ²² and Berdeaux ²¹ (2010)/CTT	Convenience, Health concerns and Emotional well-being/France and Spain; Presbyopia and cataract patients with multi-focal intraocular lens (IOL) surgery	5 sub-dimensions (21)/Evaluation of the result (2), Feelings (4), Global judgment (3), Practical advantages (5), Psychological advantages (3), Others (4)	NR - Question formats not reported	5-point Likert response scales: - Much worse (1) to Much better (5) - Very negative (1) to Very positive (5) - No, not at all (1) to Yes, absolutely (5) - Totally disagree (1) to Totally agree (5) - Definitely better with glasses (1) to Definitely better without glasses (5)
15	Near Activity Visual Questionnaire (NAVQ-10)/Buckhurst (2012) ⁹¹ /IRT	Activity limitation/UK; Presbyopia; Refractive surgery [Different types of IOLs), Contact lenses, Spectacles	Difficulty (10)	How much difficulty do you have ----- - Reading small print, such as newspaper articles, items on a menu, telephone directories? - Seeing objects close to you in poor or dim light? - Conducting near work without spectacles?	- 4-point response categories <i>[wording NR]</i>
16	Near Vision-related Quality of Life (NVQL)/Patel et al (2006) ⁹⁴ /CTT	Activity limitation/Tanzania; Presbyopia; With or without spectacles	Difficulty (13)	NR – Question formats not reported <i>[Items: Reading; Writing letters; Writing numbers; Cooking food; Winnowing grain; Sorting rice or grain; Threading a needle;</i>	- No difficulty (1) to Completely unable to carry out the task (5)

				<i>Weeding; Harvesting sorghum; Cutting fingernails and toenails; Dressing children; Lighting and adjusting a lamp; Recognizing faces of people standing near]</i>	
17.1	Contact Lens Dry Eye Questionnaire (CLDEQ)/Begley (2001) ¹⁰² /[Psychometric properties not assessed]	Symptom (Dry eye)/USA and Canada; Contact lens wearers (Daily wear - soft; Disposable; Frequent-replacement; Extended wear; Rigid gas permeable)	9 symptom subscales (36)/Discomfort, Dryness, Visual changes, Soreness, Irritation, Grittiness, Scratchiness, Foreign body sensation, Burning, Photophobia and Itching	<ul style="list-style-type: none"> - During a typical day in the past week, how often did your eyes feel dry? - When your eyes felt dry, how intense was this feeling of dryness: within the first 2 hours of getting up in the morning/in the middle of the day/ at the end of the day (within the last 2 hours before you went to bed)? - If the eyes were bothered enough 'to stop what you were doing and take out your contact lenses.] 	<ul style="list-style-type: none"> - Never(1), Infrequently (2), Frequently (3), Constantly (4), Not sure (5) - Not at all intense (1) to Very intense (5); Not sure (0) - Not at all (1) to Very much (5) <i>[Three types of response categories for Frequency, Severity and CL intolerance for each symptom]</i>
17.2	Contact Lens Dry Eye Questionnaire (CLDEQ-8)/Chalmers (2012) ¹¹⁴ /[Psychometric properties not assessed]	Symptom (dry eye)/USA; Soft contact lens wearers	3 types of domains (8)/Symptom frequency, Symptom intensity and Bothersome	<ul style="list-style-type: none"> - During a typical day in the past 2 weeks, how often did your eyes feel discomfort while wearing your contact lenses? - When your eyes felt discomfort with your contact lenses, how intense was this feeling of discomfort at the end of your wearing time? - During a typical day in the past 2 weeks, how often did your eyes bother you so much that you wanted to close them? <i>[Three types of question formats for symptom frequency, symptom intensity and bothersome]</i>	<ul style="list-style-type: none"> - Never (0), Rarely (1), Sometimes (2), Frequently (3), Constantly (4) - Never have it (0), Intense (1), 2, 3, 4 Very intense (5) - Never (0), Rarely (1), Sometimes (2), Frequently (3), Constantly (4); and - Never (1), Less than once a week (2), Weekly (3), Several times a week (4), Daily (4), Several times a day(6) <i>[Four types of response categories]</i>
18	Pediatric Refractive Error Profile (PREP)/Walline [ACHIEVE [®] Study] (2006) ⁸⁹ , ⁹⁹ /[Psychometric properties not assessed]	Quality of life/USA; Myopia; Spectacles (237) and Contact lenses (247)	10 subscales (26)/Overall vision (3), Near vision (2), Far vision (2), symptoms (4), Appearance (3), Satisfaction (1), Activities (2), Academics (2), Handling (4), Peer perceptions (3)	<ul style="list-style-type: none"> - When I wear my ____, I have problems seeing clearly. - When I wear my ____, I am able to see clearly far away. - When I wear my ____, my eyes hurt. - When I wear my ____, I like how I look. - I like to wear my ____. - I never have a problem wearing my ____ when I play outdoors. - When I wear my ____, I do better on tests. - It is easy to clean and take care of my ____. - When I wear my ____, my friends make fun of me. 	<ul style="list-style-type: none"> - Strongly agree, Agree, Neutral, Disagree, Strongly disagree [scored from 1 (negative) to 5 (positive)]
19	Spectacle Survey/Walline [ACHIEVE study] (2006) ⁸⁹ /[Psychometric properties not assessed]	Activity limitation/USA; Moderate Myopia; Spectacles/Contact lenses	7 subscales (37)/Physical appearance, Athletic competence, Social acceptance, Scholastic competence, Discomfort/inconvenience, Other correction, Satisfaction	<ul style="list-style-type: none"> - It is hard to play sports or do other physical things (play outside) because of my glasses. - I am not as good at schoolwork because of my glasses. <i>[37 statements]</i>	<ul style="list-style-type: none"> - Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)

B. Vision but non-refractive PROs

1	Ocular Surface Disease Index Questionnaire (OSDI)/Hom (2006) ¹²⁵ /CTT <i>[Originally developed in general dry eye population¹⁷⁴]</i>	Symptoms (Dry eye)/USA; Contact lens wearers	3 groups (12 items)/Symptoms (5), Symptoms related activity limitations (4), Comfort (3)	- Have you experienced any of the following during the last year: [Eyes that are sensitivity to light/ Eyes feel gritty/Poor vision] - Have problems with your eyes limited you in performing any of the following during the last week? [Reading/Driving at night/Watching TV] - Have your eyes felt uncomfortable in any of the following situations during the last week? [Windy conditions/Areas that are air-conditioned]? <i>[3 types of item wordings]</i>	- All of the time (4), Most of the time (3), Half of the time (2), Some of the time (1) None of the time (0), N/A
2.1	National Eye Institute Visual Function Questionnaire (NEI-VFQ-51)/ Walline (2000) ²⁵ /CTT <i>[Originally developed on people with various eye diseases⁹⁶]</i>	Vision related quality of life/ USA; Spectacle or contact lens wearers	13 Subscales (51)/General Health (2), General Vision (2), Ocular pain (2), Near Vision (7), Distance vision (7), Vision specific social functioning (4), Vision specific mental health (8), Expectation for visual function (3), Vision specific role functioning (5), Dependency due to vision (5), Driving (4), Peripheral vision (1), Colour vision (1)	- In general, would you say your overall health is - ---- (circle one) - At the present time, would you say your eyesight using both eyes (With glasses or contact lenses, if you wear them) is ----? - Because of your eyesight, how much difficulty do you have finding something on a crowded shelf? - How much difficulty do you have driving at night?	- Excellent (1), Very good(2), Good(3), Fair (4), Poor(5) - Excellent (1), Good(2), Fair (3), Poor(4), Very poor(5), Completely blind(6) - No difficulty at all (1), A little difficulty (2), Moderate difficulty (3), Extreme difficulty (4), Stopped doing this because of your eyesight (5) Stopped doing this for other reasons or not interested in doing this (6) - No difficulty at all (1), A little difficulty (2), Moderate difficulty (3), Extreme difficulty (4), Have you stopped doing this because of your eyesight (5) Stopped doing this for other reasons or are not interested in doing this (6)
2.2	National Eye Institute Visual Function Questionnaire (NEI-VFQ- 25)/Coleman (2006) ¹⁴⁵ /CTT <i>[Originally developed on patients with different eye diseases¹⁷⁵]</i>	Vision related quality of life/ USA; Elderly with refractive error; spectacles	13 Subscales (25)/ General Health (1), General Vision (1), Ocular pain (2), Near activities (3), Distance activities (3), Vision specific social functioning (2), Vision specific mental health (4), Expectation for visual function (3), Vision specific role difficulties (2), Vision specific dependency (3), Driving (3), Peripheral vision (1), Colour vision (1)	- In general, would you say your overall health is - ---- (circle one) - How much of the time do you worry about your eyesight? - How much difficulty do you have reading ordinary print in newspapers? Would you say you have ---- - Do you accomplish less than you would like because of your vision? - I stay home most of the time because of my eyesight	- Excellent (1), Very Good(2), Good(3), Fair (4), Poor(5) - None of the time (1), A little of the time(2), Some of the time(3), Most of the time(4), All of the time(5) - No difficulty at all (1), A little difficulty (2), Moderate difficulty (3), Extreme difficulty (4), Stopped doing this because of your eyesight (5), Stopped doing this for other reasons or not interested in doing this (6) - All of the time(1), Most of the time(2), Some of the time(3), A little of the time (4), None of the time(5) - Definitely true(1), Mostly true(2), Not sure(3), Mostly false(4), Definitely False(5)
3	McMonnies Questionnaire/Albietz (2002) ¹³³ /CTT <i>[Originally developed on people with general dry eye¹⁷⁶]</i>	Symptom (Dry eye)/ Australia; Hyperopia; LASIK	Symptom (12)	-Do you ever experience any of the following symptoms: Soreness/ Scratchiness/ Dryness/ Grittiness/ Burning -How often do you have these symptoms?	-Yes/No -Constantly, Often, Sometimes -Constantly, Often, Sometimes, Never <i>[5 types of response categories]</i>

				-Do you experience dryness of the nose, mouth, throat, chest or vagina?	
4	Ocular Comfort Index (OCI)/Evans (2009) ¹³⁵ /IRT [Originally developed on people with general dry eye ¹⁷⁷]	Symptoms (Dry eye)/UK; Contact lens wearers and non-contact lens wearers (controls)	2 subscales (12)/ Symptom frequency (6), Symptom intensity (6) [6 symptoms: dryness, grittiness, stinging, tiredness, pain, itching]	- In the last week, how often did your eyes feel dry? - When your eyes felt dry, typically, how intense was the dryness?	- Never (0) to Always (6) with descriptors (0, 1,2,3,4,5,6) - Severity: Never had it (0) to Severe (6) With descriptors (0,1,2,3,4,5,6)
5	Dry Eye Questionnaire (DEQ)/ Toit (2001) ¹⁷⁸ /CTT [Originally developed on people with general dry eye ¹⁷⁹]	Symptoms (Dry eye)/Canada; Presbyopia; Monovision/Bifocal contact lenses	3 subscales (22)/Frequency (10), Intensity (6), Bothersome (6)	- During a typical day in the past week, how often did your eyes feel dry? - When your eyes felt dry, how intense was this feeling of dryness: within the first 2 hours of getting up in the morning/in the middle of the day/ at the end of the day (within the last 2 hours before you went to bed)? - If the eyes were bothered enough 'to stop what you were doing and take out your contact lenses.' - During a typical day in the past week, how often did you experience dryness of the nose, mouth, or vagina? - If you use any of the following treatments for dry eye, how much help do they provide? - Do you think you have dry eye(s)? [Nine types of question formats]	- Never (0), Rarely(1), Sometimes(2), Frequently(3), Constantly(4) - Not at all intense (1) to Very intense (5); Never have it (0) - Not at all bothered(1) to bothered (5) Never have it (0) - No help at all, Complete relief, Do not use - Yes/No [Nine types of response categories]
6	Symptom Assessment in Dry Eye Questionnaire (SANDE)/Chen (2013) ¹¹⁹ /CTT [Originally developed on people with dry eye syndrome ¹⁸⁰]	Symptoms (Dry eye)/USA; Contact lens wearers (Oral contraceptive pills users)	Symptoms (2)	- Please place an 'X' on the line to indicate 'how often', on average, your eyes feel dry and/or irritated: [Frequency of symptoms] - Please place an 'X' on the line to indicate 'how severe', on average, you feel your symptoms of dryness and/or irritation: [Severity of symptoms]	- Rarely ---- All the time [Frequency of symptoms] - Very mild --- Very severe [Severity of symptom] [Two types of response categories recorded on a visual analogue scale 0 to 100 mm]
7	Dry Eye questionnaire and Scoring System (DESS)/Bhargava (2015) ¹³⁶ / CTT [Originally developed on people with general dry eye ¹⁸¹]	Symptom (Dry eye)/ India; Contact lens wearers	Symptoms (6)	- Itching or burning; Sandy or gritty; Sensation; Redness; Blurring of vision; Ocular fatigue; [Excessive blinking (Symptoms vs Response categories: cross tabulation format)]	- Absent(0), Sometimes(1), Frequent(2), Always(3)
8	Salisbury Eye Evaluation Questionnaire (SEEQ) for Dry Eye Symptoms/Wang (2015) ¹²¹ / CTT [Originally developed on people with general dry eye ¹²¹]	Ocular comfort symptoms/Myopic patients who had Small Incision Lenticule Extraction and femtosecond-LASIK	Symptoms (6)	- Do your eyes ever feel dry? - Do you ever feel gritty or sandy sensation in your eye? - Are your eyes ever red? - Do your eyes ever have a burning sensation? - Do you notice much crusting on your lashes? - Do your eyes ever get stuck shut in the morning?	- Rarely(0), Sometimes(0), Often (1), All the time (1)
9.1	Visual Function Index - 14 (VF-14)/ Rose (2000) ¹³⁷ /CTT	Activity limitation/ UK; Myopia	2 domains (14)/General functioning (12), Driving – Day and night (2)	- Do you have any difficulty, even with glasses, reading small print, such as labels on medicine bottles, a telephone book, food labels?	- Not applicable, No(4), Yes, with a little difficulty (3), Yes, with a moderate amount of difficulty (2), Yes, with a great deal of

	<i>[Originally developed for cataract surgery population⁷⁹]</i>			- Have you ever driven a car?	difficulty (1), Yes, and am unable to do the activity (0) - Yes/No
9.2	Visual Function Index - 7 (VF-7)/ Wang (2012) ¹³⁹ /CTT <i>[Originally developed for cataract surgery population¹⁸²]</i>	Activity limitations/ China; High Myopia; Multifocal intraocular lens	Satisfaction (7)/ <i>[Items from VF-14 that most correlated with Satisfaction: Reading small print; Seeing steps, stairs, or curbs; Reading traffic, street or store signs; Doing fine handwork; Cooking; Watching television; Night-time driving]</i>	- How much difficulty do you have driving at night because of your vision? Do you have ----- - Do you have any difficulty, even with glasses, watching television?----- If yes, how much difficulty do you currently have?	- No difficulty (1); A little difficulty (2); A moderate amount of difficulty (3); A great deal of difficulty (4) - Yes/No/Not applicable - A little (1), A moderate amount (2), A great deal (3), Are you unable to do the activity?(4)
10	Activities of daily vision scale (ADVS)/ Freitas (1995) ¹⁴⁴ /CTT <i>[Originally developed for cataract population¹⁸³]</i>	Activity limitation/ Portugal; Patients undergoing excimer laser PRK	5 Subscales (22)/ Daytime driving, Night driving, Near vision, Far vision and Glare disability	- How difficult do oncoming headlights or street lights make driving at night for you? - Would you say that you see faces in bright sunlight with:	- Not difficult at all (5), A little difficult (\$), Moderately difficult(3), Extremely difficult(2), So difficult, I no longer drive for this reason (1) - No difficulty at all (5), A little difficulty (4), Moderate difficulty(3),Extreme difficulty(2), Unable to see faces in bright sunlight because of visual problems (1)
11	Vision Related effect on Quality of Life (VQOL/Vision Core Measure-1 (VCM1))/Rose (2000) ¹³⁷ /CTT <i>[Originally developed for cataract and other eye condition¹⁸⁴⁻¹⁸⁵]</i>	Quality of life/UK; Myopia	2 Domains (10)/Concerns (4) Well-being (6)	In the past month: - How often has your eyesight made you concerned or worried about your general safety at home?	-Not at all (0), Very rarely(1), A little of the time (2), A fair amount of the time (3), A lot of the time (4), and All the time (5)
12	Nursing Home Vision-Targeted Health-Related Quality-of-Life (NHVQOL)/Owsley (2007) ¹³⁸ /CTT <i>[Originally developed for nursing home residents¹⁸⁶]</i>	Quality of life/USA; Elderly with uncorrected refractive error; Spectacles	9 Subscales (57)/General vision (6), Reading (3), Ocular symptoms (9), Mobility (7), Psychological stress (10), Activities of daily living (6), Activities/hobbies(8), Adaptation/coping (2), and social interaction (6)	- At the present time, would you say your eyesight using both eyes, with glasses if you wear them, is - ---- ? - How much of the time do you worry about your eyesight? Would you say: - How much does it bother you that you worry about your eyesight? - Do you have difficulty recognizing people you know from across a room at least partly because of your vision?	-Excellent (1), Very good (2), Good (3), Fair (4), Poor(5), Completely blind (6) - None of the time (1), A little of the time (2) Some of the time (3), Most of the time (4), Most of the time (4), All of the time (5) - Not at all (0), A little (1), A lot (2) - No difficulty at all (1), A little difficulty (2), Moderate difficulty (3), Extreme difficulty (4), Stopped doing this because of your eyesight (5), Stopped doing this for other reasons or not interested in doing this (6), Could do this activity but not given the opportunity (7)

C. Generic PROs in refractive error

1	Paediatric Impact Of Assistive Devices Scale (PIADS)/Day (1996) ¹⁵² /CTT [<i>Originally developed for people with assistive devices such as spectacles</i> ¹⁵²]	Psychosocial impact/Canada; Spectacles, Contact lenses	3 domains (26)/Competence (12), Adaptability (6), Self-esteem (8)	NR - Question formats not reported [<i>Domain (Items): Competence (competence, adequacy, efficiency, productivity, usefulness, expertise, capability, performance, skilfulness, independence, quality of life, confusion, Adaptability (Willingness to take chances, ability to participate, eagerness to try new things, ability to adapt to ADL, ability to take advantage of opportunities, wellbeing), Self-esteem (self-esteem, security, sense of power, embarrassment, happiness, sense of control, frustration, self-confidence)]</i>]	11 point Visual analogue scale (0-10) Altered to -3 to +3 scale
2	Speilberger State Anxiety Scale/ Court (2008) ¹⁵⁵ /CTT [<i>Originally developed for patients and general population</i> ¹⁸⁷]	Symptom (Anxiety)/UK; Contact lens wearers	State (20)	Question formats not reported	- Not at all (1), Somewhat (2), Moderately so (3), Very much so (4)
3	General Well-Being Schedule (GWBS)/ Takashima (2001) ¹⁵⁷ /CTT [<i>Originally developed for general patients</i> ¹⁸⁸]	Emotional well-being/Pathological Myopia and normal controls	6 subscales (18)/Anxiety(4), Depression(3), Positive well-being (3), Self-control(3), Vitality(3), General health(2)	During the past month: - How have you been feeling in general? - Have you been anxious, worried, or upset? - Have you been waking fresh and rested?	- In excellent spirits (5), In very good spirits (4), In good spirits mostly (3), I've been up and down in spirits a lot (2), In low spirits mostly (1), In very low spirits(0) - Extremely so - to the point of being sick, or almost sick (0), Very much so (1), Quite a bit (2), Some—enough to bother me (3), A little bit (4), Not at all (5) - Every day(1), Most every day (2), Fairly often (3), Less than half the time (4), Rarely(5), None of the time(6)
4	Adjective Check List/ Toczolowski (2001) ¹⁵⁹ /CTT [<i>Originally developed for psychological patients or for general population</i> ¹⁸⁹]	Emotional well-being/Radial keratotomy	5 Parts (with 37 scales consisting 300 adjectives)/ Modus operandi (4 scales), Need (15 scales), Topical (9 scales), Transactional analysis (5 scales), Origence-intellectence (4 scales) [<i>Originally developed for general individuals for self-evaluation</i>]	- Mark the adjectives that describe what you are like - Mark the adjectives that describe what you were like before the surgery	[<i>Number of items to be selected from the list of adjectives</i>]
5	General Health Questionnaire (GHQ)/ Kidd (1997) ¹⁶⁰ /CTT [<i>Originally designed for screening of psychiatric</i>]	Emotional well-being/Individuals with Myopia presenting for PRK	Psychological distress (30)	- Have you found everything getting on top of you? - Have you been getting scared or panicky for no good reason? - Have you been getting edgy and bad tempered?	- Not at all (0), No more than usual (1), Rather more than usual (2), More than usual (3) [<i>Sum above 4 = anxiety or distress</i>]

	<i>disorders in non-psychiatric settings^{190]}</i>	(cases) or contact lenses (controls)			
6	Hudson Index of Self-Esteem (ISE)/Kidd (1997) ^{160]/ CTT [Originally designed for screening of low self-esteem^{191]}}	Individuals with Myopia presenting for PRK (cases) or contact lenses (controls)	Self-esteem (25)	<ul style="list-style-type: none"> - I feel that people would not like me if they really knew me well. - When I am with others, I feel they are glad I am with them. - I feel ugly. - My friends think very highly of me. 	<ul style="list-style-type: none"> - Rarely or none of the time (1), A little of the time (2), Some of the time (3), A good part of the time (4), Most or all of the time (5) [Hudson score = sum – 25; Scores above 30 = Low self-esteem]
7	Armstrong Laboratory Aviation Personality Survey (ALAPS) Depression scale/Morse (2009) ^{158]/CTT [Originally developed for use in aviation personnel^{192]}}	Emotional well-being; USA; Myopia (low to moderate), Astigmatism; Bilateral LASIK	Depression scale (16 items) [This is one of the 15 scales of the ALAPS]	Question formats not reported [Depressed mood, cognitive and vegetative symptoms, and dysphoric affect measured]	<ul style="list-style-type: none"> - True or False
8	Hospital Anxiety and Depression Scale (HADS)/ Yokoi (2014) ^{26]/CTT [Originally developed for patients in hospital medical outpatient clinic]}	Anxiety and Depression/Pathologic Myopia	2 Scales (14)/ Anxiety (7), Depression(7)	<ul style="list-style-type: none"> - I feel tense or ‘wound up’: - I get sudden feelings of panic: - I can sit at ease and feel relaxed: - I still enjoy the things I used to enjoy: - I can laugh and see the funny side of things: - I can enjoy a good book or radio or television program: 	<ul style="list-style-type: none"> - Most of the time (3); A lot of the time (2), From time to time occasionally (1), Not at all (0) - Definitely as much (0), Not quite so much (1), Only a little (2), Hardly at all (3)
9	Geriatric Depression Scale (GDS)/ Owsley (2007) ^{138]/CTT [Originally developed for elderly people with or without depression^{193]}}	Emotional well-being/Elderly with refractive correction	Symptoms (15)	<ul style="list-style-type: none"> - Are you basically satisfied with your life? - Do you feel that your life is empty? - Do you feel full of energy? 	<ul style="list-style-type: none"> - Yes/No
10	Survey of Activities and Fear of Falling in the Elderly (SAFE)/ Elliott (2009) ^{156]/CTT [Originally developed for general elderly population^{194]}}	Activity limitation/ USA; Elderly with cataract surgery or refractive correction	Activities (11)/ [Go to the store Visit a friend or relative, Prepare simple meals, Reach for something over your head, Take a tub bath, Go to a place with crowds, Get out of bed, Walk several blocks outside, Take a walk for exercise, Bend down to get something, Get out when it is slippery]	<ul style="list-style-type: none"> - Do you currently do the activity? - If you do the activity, when you do it how worried are you that you might fall? - If you do not have to do the activity, do you not do it because you are worried that you might fall? - If you do not do the activity because of worry, are there also other reasons that you do not do it? - If you are not worried, what are the reasons you do not do it? (specify) - Compared to five years ago, would you say that you do it more, about the same or less than you used to? 	<ul style="list-style-type: none"> - Yes/No - Very worried (1), somewhat worried (2), A little worried (3), Not at all worried (4) - More than you used to (1), About the same (2), Less than you used to (3)
11	Cantril Self-Anchoring Striving Scale/Freitas (1995) ^{144]/CTT [Originally developed for general patients^{195]}}	General well-being/ Portugal; Patients undergoing excimer laser PRK	Well-being (2)	<ul style="list-style-type: none"> - On which step of the ladder would you say you personally feel you stand at this time? - On which step do you think you will stand about five years from now? 	<ul style="list-style-type: none"> - Best possible life (10) – 987654321 – Worst possible life (0)
12	Self-perception profile for children (SPPC)/Walline (2006) ^{89]/CTT [Originally}	Competence/USA; Moderate Myopia; Spectacles, Contact	6 scales(36)/ Scholastic competence(6) , Social acceptance(6), Athletic	<ul style="list-style-type: none"> - Some kids are often unhappy with themselves BUT Other kids are pretty pleased with themselves 	<ul style="list-style-type: none"> - Really true for me/Sort of true for me [The child is asked to decide which kind of child is most like him/her]

	<i>developed for school-children^{196]}</i>	lenses; (<i>ACHIEVE study population</i>)	competence(6), Physical appearance(6), Behavioural conduct(6), and Global self-worth(6)	- Some kids are very happy being the way they are BUT Other kids wish they were different	
13	Symptom Checklist–90-Revised (SCL-90-R)/ Freitas (1995) ^{144]/CTT [Originally developed for general patients^{197]}}	General symptom (Psychological)/Portugal; Patients undergoing excimer laser PRK	Symptoms (90)	- For the past week, how much were you bothered by: - Headaches; Nervousness or shakiness inside; Unwanted thoughts, words or ideas that won't leave your mind; Troubling falling asleep; Shouting or throwing things; Overeating	- Not at all (0), A little bit (1), Moderately (2), Quite a bit (3), Extremely (4)
14	Modified McGill Pain Questionnaire/ Vetrugno (2000) ^{161]/CTT [Originally developed for people experiencing significant pain^{198]}}	Pain/Italy; Myopia; PRK	Two parts (11)/ First part (6) [<i>after reepithelization</i>], Second part (5) [<i>at the end of therapy</i>] [The original McGill Pain questionnaire has 4 subscales (with 78 pain descriptors): Sensory, affective, evaluative and miscellaneous aspects of pain]	-Did you notice persistent watering of the treated eye? -Did your eyes itch? -How strong was your pain? (Please tick one) -Were you able to read or to write?	-Yes/No -Mild (1), Discomforting (2), Distressing (3), Horrible (4), Excruciating (5)
15	Brief Pain Inventory (BPI)/Garcia (2016) ^{163]/CTT [Originally developed for use in cancer patients^{199]}}	Pain/Brazil; Myopia; PRK	Two indices (11)/ Pain intensity index (4), Function interference index (7)	Question formats not reported [Intensity of pain and related impairment in the previous 24 hours]	- No pain (0) to Pain as bad as you can imagine (10) - No interference (0) to Complete interference (10)
16	Short-Form (SF-36) Questionnaire/Owsley (2007) ^{138]/CTT [Originally developed for use in general clinical practice or in population surveys^{200]}}	Quality of Life (Functional status, Well-being, Overall evaluation of health) Elderly with refractive correction	8 Dimensions (36)/Physical functioning (10), Social functioning (2), Role limitations-Physical problems (4), Role limitations – emotional problems (3), Mental health (5), Vitality(4), Pain (2), General health perception (5), Health change (1)	- In general, would you say your health is: - Does your health limit you in these activities? If so, how much? [<i>Climbing several flights of stairs; Bending, kneeling or stooping; Walking half a mile</i>] -How much time during the past month did you feel full of life?	- Excellent (1), Very good (2), Good (3), Fair (4), Poor(5) - Yes, Limited a lot; Yes, limited a little; No, not limited at all - All of the time, Most of the time, A good bit of the time, Some of the time, A little of the time, None of the time

† Photo-Refractive Keratectomy, ‡ Laser Assisted Keratomileusis In Situ, § Adolescent and Child Health Initiative to Encourage Vision Empowerment