

**SDC2.** Characteristics of the included studies.

Study characteristics					Participants' characteristics			Exposure/Intervention		Outcomes
Author, year	Country	Design	Follow-up	No. Participants	Characteristics	Sex (%F)	Age <sup>1</sup>	Injected area	CaHA brand, Dosage (mean)	Outcomes (assessment methods)
<b>Facial</b>										
<b>Pavicic, 2022</b> <sup>5</sup>	Germany	Pre/post	12-16w	207	Moderate to severe facial volume deficit	B (96.6)	54.1±10.12	NLFs, marionette lines, and/or cheeks	Radiesse(+), 1.77-2.23 mL	- Investigators Nasolabial Folds improvement, MNLFS. - Investigators Marionette Lines improvement, MMLS. - Investigators Upper Cheek Fullness improvement, MUCFS. - Investigators Global Aesthetic Improvement, GAIS. - Patients Global Aesthetic Improvement, GAIS. - Patient satisfaction, FACE-Q.
<b>Tzikas, 2004</b> <sup>50</sup>	US	Pre/post	6m	90	Healthy people that could benefit from treatment	B (94)	25-85	NLFs, Upper/lower lip, Glabella region, Prejowl area, Marionette lines	Radianse FN, 142 mL for 90 patients	- Patient satisfaction, a 4-point scale.
<b>Barbarino, 2021</b> <sup>35</sup>	US	Pre/post	30d	10	A grade of at least 2 on the validated ATHS	B (80)	32-68	Temple area	Radiesse(+), 1.5 - 4.5 mL	- Investigators Global Aesthetic Improvement, GAIS. - Patient satisfaction, a 5-point scale (5 very satisfied). - Temple hollowing, ATHS.
<b>Juhász, 2018</b> <sup>12</sup>	US	Pre/post	12m	20	Moderate to severe temporal fossae volume loss based on MTS.	B (80)	63.45	Temporal fossae at the level of the deep fascial plane	Radiesse(+), 1.62±0.57 mL (right temporal fossae); 1.47±0.53 mL (left)	- Investigators Temple volume improvement, MTS. - Patient Global Aesthetic Improvement, GAIS.
<b>Aletaha, 2017</b> <sup>57</sup>	Iran	Pre/post	19.5m (16-27)	12	PESS and small orbital volumes	B (41.6)	35 (21-72)	Orbital	Radiesse, 1.5 mL	- Sulcus deformity, a 4-point scale (0 as normal).
<b>Alghoul, 2020</b> <sup>34</sup>	Jordan	Pre/post	3m	20	With signs of volume deflation in the brow and lateral eyelid-cheek areas.	F	41 (26-66)	Lateral periorbital region	Radiesse, 1.88±0.34 mL	- Investigators Global Aesthetic Improvement, GAIS. - Patient satisfaction, a 5-point Likert scale.
<b>Corduff, 2019</b> <sup>54</sup>	Australia	Pre/post	14-16w	12	With tear trough area deformity	NM	25-52	Periorbital	Radiesse, 0.8 mL	- Skin thickness, NM. - Aesthetic Improvement, GAIS and TTRS.
<b>Juhász, 2018</b> <sup>56</sup>	US	Pre/post	12m	20	NM	B (75)	60.2	Jawline	Radiesse(+), 1.60±0.52 mL (right side); 1.73±0.68 mL (left side)	- Jawline volume loss, MJS. - Patient Global Aesthetic Improvement, GAIS.
<b>Rokhsar, 2008</b> <sup>43</sup>	US	Pre/post	6m	14	With a history of prior surgical rhinoplasty	NM	NM	Dorsal nasal surface	Radiesse, 0.27 mL	- Patient satisfaction, a 3-point scale (0 as unsatisfied)

<b>Stupak, 2007</b> <sup>48</sup>	US	Pre/post	2.5 (1-6m)	13	Post rhinoplasty or post injury with contour defects judged to be not amenable or not acceptable for revision surgery	NM	18-62	Dorsal nasal surface	Radiesse, 0.5-3 mL	- Patient satisfaction, a 4-point scale. - Efficacy assessment by physician, NM.
<b>Becker, 2008</b> <sup>36</sup>	US	Pre/post	26m	18	NM	B (NM)	28-72	Nasal bridge, lateral nose, columella, nasal tip	Radiesse, 0.25-1.3 mL	- Patient satisfaction, a 10-point scale (0 as extremely dissatisfied)
<b>Tanaka, 2014</b> <sup>49</sup>	Japan	Pre/post	7d	40	NM	B (95)	39.6±10.6	Anterior nasal spine	Radiesse, NM	- Patient satisfaction, a 5-point scale (0 as worse)
<b>Silvers, 2006</b> <sup>46</sup>	US	Pre/post	12-18m	98	HIV/facial lipoatrophy grade 2, 3, 4 on Facial Lipoatrophy Severity Scale	B (6)	NM	Cheek area (usually the sub malar region)	Radiesse, 8.4±3.6 mL	- Patient Global Aesthetic Improvement, GAIS. - Patient satisfaction, Yes/No question. - Skin thickness, caliper.
<b>Carruthers, 2008</b> <sup>53</sup>	Canada	Pre/post	12m	29	HIV/facial lipoatrophy grade 2, 3, 4 on the Carruthers Facial Lipoatrophy Severity Scale	B (3.3)	51	Sub malar region (extended to malar eminence and zygoma)	Radiesse, 9.5 mL (5.2-17)	- Patient Global Aesthetic Improvement, GAIS. - Skin thickness, caliper.
<b>Muti, 2019</b> <sup>13</sup>	Italy	Pre/post	120d	25	With age related volume loss	F	52.3	Cheeks, marionette lines, prejowl sulcus, jawline	Radiesse(+), 1.7 mL (1-3)	- Doctors Aesthetic improvement, Merz Aesthetics Scale. - Patients Aesthetic improvement, GICS.
<b>Jacovella, 2005</b> <sup>40</sup>	Argentina	Pre/post	18m	40	Healthy	B (87.5)	25-60	Glabellar wrinkles, NLFs, lips, nose, infraorbital areal	Radiance FN, 0.75 mL (range 0.5-2)	- Patient satisfaction, a 3-point scale.
<b>Beer, 2008</b> <sup>37</sup>	US	Pre/post	6m	16	With signs of mid face volume loss	F	40-75	Malar area	Radiesse, 1.13 mL (per side, range 0.65- 3.1)	- Patient satisfaction, a 4-point scale. - Investigators aesthetic rating, a 4-point scale. - Patient Global Aesthetic Improvement, GAIS. - Investigators Global Aesthetic Improvement, GAIS.
<b>Dayan, 2008</b> <sup>55</sup>	US	Pre/post	12m	20	NM	F	56 (46-72)	lower one third of face (NLFs, prejowl sulcus, oral commissure grooves, marionette lines)	Radiesse, 4.9 cm <sup>3</sup> (3.2-6.5)	- Physicians severity of wrinkles, Dayan Severity Scale - Patient Global Aesthetic Improvement, GAIS. - Investigators Global Aesthetic Improvement, GAIS.
<b>Rauso, 2013</b> <sup>42</sup>	Italy	Pre/post	3m	18	With HIV receiving antiretroviral therapy	NM	≥18	NM	Radiesse, NM	- Patient satisfaction, NM.
<b>Baspeyras, 2017</b> <sup>51</sup>	France	Pre/post	360d	35	healthy individuals who required jawline contouring	F	57	Mandibular angle, prejowl sulcus, posterior cheek vector, cheek bone	Radiesse, 5.18 mL	- Investigators aesthetic improvement score for jawline contour, MJS. - Investigators aesthetic improvement score for marionette lines, MMLS. - Patient Aesthetic Improvement, a 5-point scale. - Investigators Aesthetic Improvement, a 5-point scale.
<b>Roy, 2006</b> <sup>44</sup>	US	Pre/post	3m	60	Patients requesting facial soft tissue augmentation	B (96)	NM	Melolabial folds and lips	Radiesse, 0.29 mL (Per side of melolabial folds);	- Patient satisfaction, a 5-point scale. - Investigator satisfaction, a 5-point scale.

									0.37 mL (upper lip), 0.34 mL (lower lip)	
<b>Sadick, 2007</b> <sup>45</sup>	US	Pre/post	6m	41	With a facial soft tissue deficiency amenable to treatment	B (88.5)	26-78	NLFs, lips, perioral lines, Cheeks, tear trough depression, pre jowl sulcus	Radiesse, 1-2 mL	- Patient satisfaction, a 5-point scale (1 as unsatisfied). - Investigator satisfaction, a 5-point scale (1 as unsatisfied).
<b>Fakhre, 2009</b> <sup>38</sup>	NM	Observational, Retrospective	NM	28	NM	NM	NM	NLFs	Radiesse, 0.25-0.65 mL (per NLFs)	- Patient satisfaction, a 5-point scoring system (5 as the highest level satisfaction).
<b>Sklar, 2004</b> <sup>47</sup>	US	Observational, Not clear	6m	64	NM	NM	NM	NLFs, tear trough, lips, infraoral, cheeks, mental crease, above upper lip, buccal region	Radianse FN, 0.15-0.91 mL	- Patient and Investigator satisfaction, NM.
<b>Vagefi, 2011</b> <sup>4</sup>	NM	Observational, Retrospective	46w	15	Postenucleation/evisceration socket syndrome	B (53.3)	42	Orbital	Radiesse, 1.3-2.6 mL	- Relative enophthalmos measurement, Hertel exophthalmometry. - Patients Clinical and aesthetic improvement, NM.
<b>Bernardini, 2014</b> <sup>52</sup>	Italy	Observational, Retrospective	1m	63 (Pairs of eyelids)	NM	B (92)	42 (18-57)	Tear trough area	Radiesse (+), 1 mL (mixture with lidocaine per injection site)	- Patient and Investigator aesthetic improvement, a 3-point scale.
<b>Hevia, 2009</b> <sup>39</sup>	US	Observational, Retrospective	NM	301	NM	B (92)	Males: 25-70 Females: 28-82	Under the eyes (malar crease, the nasojugal folds, and the tear trough, which constitute the infraorbital groove)	Radiesse, Less than 0.6 mL (For both eyes)	- Patients satisfaction, NM. - Investigator improvement assessment, NM.
<b>Wollina, 2020</b> <sup>11</sup>	Germany	Observational, Not clear	36m	40	NM	F	63±13.4	Cheeks, tear troughs, jawline, Marionette lines	Radiesse, 3 mL	- Investigators Global Aesthetic Improvement, GAIS. - Patient Global Aesthetic Improvement, GAIS.
<b>Kim, 2018</b> <sup>8</sup>	Korea	Observational, Retrospective	NM	218	NM	B (85.09)	34.7 (18-48)	Forehead	Radiesse, 1.5-3 mL	- Effectiveness on Forehead (Investigator), NM. - Patient satisfaction, NM.
<b>Jansen, 2006</b> <sup>41</sup>	US	Observational, Retrospective	24m	112	NM	B (89.5)		NLF, lips, Radial lip lines, Corner of mouth, Marionette lines, Glabellar lines, Cheek/chin lines, Acne scars, Scar deformities, Facial depression (HIV lipoatrophy), Cheek augmentation, Nasal depressions, Tear troughs	Radiesse, 0.12 - 0.62 mL (For different areas)	- Patient satisfaction, a 5-point scale (1 as least satisfied).
<b>Rovatti, 2020</b> <sup>7</sup>	Italy	Observational, Retrospective	4m	40	NM	B (92.5)	57.1±9.3	Mid and lower face (upper cheek fullness, NLFs, marionette lines, oral commissures, jawline)	Radiesse, 1.5 mL of hyper diluted CaHA	- Investigator Severity Scores for Mid and Lower Face Scales, 5 validated scales for skin aging of the mid and lower face (upper cheek fullness, NLFs at rest, marionette lines at rest, oral commissures at rest, and jawline at rest scales). - Patient satisfaction, a 3-point scale.
<b>Di Maria, 2024</b> <sup>58</sup>	Italy	Observational, Not clear	219±18m	31	With post enucleation socket syndrome.	B (19.35)	44±14.8	Orbital area	NM, 2.35 ± 0.52 mL (range, 1.3–2.6)	- Orbital volume, a Hertel exophthalmometer with the ocular prosthesis in place.

										- Improvement, NM.
										<u>Hand</u>
<b>Kim, 2021</b> <sup>21</sup>	Korea	Pre/post	3m	20	NM	F	42.5 (29-60)	Hand	Radiesse, 1.5 mL (per hand)	- Hand grading, MHGS.
<b>Sadick, 2011</b> <sup>22</sup>	US	Pre/post	52w	10	Wrinkle severity score of at least 3	F	45-65	Hand	Radiesse, 1.3 mL (per hand)	- Wrinkle severity, a 5-point scale (0 as no wrinkle). - Patients satisfaction, a 5-point scale.
<b>Haq, 2010</b> <sup>19</sup>	France, Germany, Belgium, Netherlands, Spain, UK	Pre/post	12w	62	Presented with treatable volume loss on hands	B (98.3)	≥18	Thinning tissue of aging hand	Radiesse, 0.80-5.20 mL (both hands)	- Investigators Global Aesthetic Improvement, GAIS. - Investigator satisfaction, a 6-point scale. - Patient satisfaction, a 6-point scale.
<b>Adel, 2023</b> <sup>59</sup>	Egypt	Pre/post	6m	40	With grade 4 according to the five-point hand grading scale.	F	NM	Hand	Radiesse, 0.5 mL + 0.5 mL diluted with a 1.5 mL saline (per hand, 3 sessions)	- Patient satisfaction, a 5-point scale.
										<u>Abdomen/Upper arm</u>
<b>Lapatina, 2017</b> <sup>61</sup>	Russia	Pre/post	70d	10	With skin laxity of the anterior abdominal wall	F	27-53	Abdomen	Radiesse, 0.8 mL	- Dermal thickness, ultrasound scans. - Patients Global Aesthetic improvement, GAIS.
<b>Lapatina, 2017</b> <sup>61</sup>	Russia	Pre/post	3m	10	Mild to moderate skin laxity	F	41-61	Upper arm	Radiesse, 1.5 mL	- Skin elasticity, Cutometer. - Patient Global Aesthetic improvement, GAIS. - Investigator Global Aesthetic improvement, GAIS.
<b>Wasylkowski, 2015</b> <sup>62</sup>	Spain	Pre/post	5w	12	With self-evaluated flaccidity scores 3 on a 6-point scale (0 as no flaccidity)	F	28-67	Thigh, hemiabdomen or brachial zone	Radiesse, 3 mL (per thigh), 1.5 mL (per hemiabdomen), 1.5 mL (per brachial zone)	- Skin flaccidity, Cutometer. - Skin flaccidity (Subjects rated), a 6-point scale. - Skin density, Ultra scan. - Skin thickness, Ultra scan.
<b>Amselem, 2016</b> <sup>60</sup>	Spain	Pre/post	4m	30	Healthy women wanting to improve aesthetic appearance of their arms.	F	45-65	Upper arm	Radiesse, NM	- Investigator satisfaction, Global satisfaction score (1 as very dissatisfied). - Skin flaccidity, a 10-point visual analog scale (0 as very bad). - Volume, a 10-point scale (0 as very bad).
										<u>Neck/ Chest/ Décolletage</u>
<b>Guida, 2021</b> <sup>64</sup>	Italy	Pre/post	3m	20	Score of ≥1, according to NSL	B (90)	55±5.8	Neck	NM, NM	- Neck skin laxity severity, 5-point validated NSL scale. - Patient satisfaction, 5-point scale (0 as very unsatisfied).
<b>Fabi, 2021</b> <sup>63</sup>	US	Pre/post	360d	16	Moderate to severe skin laxity of the chest (grade of 2 or greater on the MDS)	F	61±8.9	Chest wrinkle/ Décolletage	Radiesse, 1.5 mL	- Chest wrinkle appearance, MDS (Dynamic and at rest). - Patient satisfaction, 7-point scale (0 as completely dissatisfied).

<b>Yutskovskaya, 2017</b> <sup>65</sup>	Russia	Pre/post	7m	20	Skin laxity in the neck and Décolletage	F	35-45	Neck and Décolletage	Merz (Diluted CaHA), NM	<ul style="list-style-type: none"> <li>- Skin elasticity, Cutometer.</li> <li>- Skin viscoelasticity, Cutometer.</li> <li>- Dermal Thickness, Ultrasound imaging.</li> <li>- Investigators Global Aesthetic Improvement, GAIS.</li> <li>- Patients Global Aesthetic Improvement, GAIS.</li> </ul>
<b>De Almeida, 2023</b> <sup>66</sup>	Brazil	Pre/post	120d	22	with mild or moderate horizontal neck lines and mild or moderate neck laxity	F	43.5±5.6	Neck	Radiesse, 1.5 mL	<ul style="list-style-type: none"> <li>- Horizontal necklines and Neck Laxity, Merz horizontal necklines scale.</li> <li>- Dermal thickness, Ultrasound.</li> <li>- Patients Global Aesthetic Improvement, GAIS.</li> <li>- Patient satisfaction, 4-point scale (Unsatisfied, neutral, satisfied, very satisfied)</li> </ul>
<b><u>Knee / Foot / Buttocks</u></b>										
<b>Guida, 2020</b> <sup>67</sup>	NM	Observational, Retrospective	3m	20 (pairs of knee)	NM	F	50±7	Area above the knee	Merz (Hyperdiluted CaHA), 1.5 mL	<ul style="list-style-type: none"> <li>- Knee cellulite severity score, KCSS.</li> <li>- Patient satisfaction, 3-point scale.</li> </ul>
<b>Custozzo, 2020</b> <sup>68</sup>	Brazil	Observational, Retrospective	3m	53	Healthy	F	64.1±8.3	Dorsum of foot	Radiesse, 1.60±0.49 mL per foot	<ul style="list-style-type: none"> <li>- Patient Global Aesthetic Improvement, GAIS.</li> <li>- Thickness, Ultrasound imaging.</li> </ul>
<b>Durariaj, 2024</b> <sup>69</sup>	US	Pre/post	14w	24	Healthy	F	35.54±6.63	Buttocks	Radiesse, 1.5 mL (3 sessions)	<ul style="list-style-type: none"> <li>- Cellulite severity, Cellulite severity score.</li> <li>- Investigators Global Aesthetic Improvement, GAIS.</li> <li>- Patients Global Aesthetic Improvement, GAIS.</li> <li>- Number of visible dimples and dimple depth- Investigators, Visual analysis of 3D photographs.</li> </ul>

<sup>1</sup>Age is reported either in mean (min, max) or min-max, or mean ± SD.

M: Males; F: females; B: Both; NM: Not mentioned; PESS: Post-enucleation socket syndrome; NLFs: Nasolabial folds; GAIS: Global Aesthetic Improvement Scale; AHS: Allergan Temple Hollowing Scale; MNLFS: Merz Nasolabial Folds Scale; MMLS: Merz Marionette Lines Scale; MUCFS: Merz Upper Cheek Fullness Scale; MJS: Merz Jawline Scale; MHGS: Merz Hand Grading Scale; NSL: Neck skin laxity scale; MDS: Merz Décolletage Scale; KCSS: Knee cellulite severity score; MTS: Merz Validated Temple Scale Assessment volume loss; GICS: Global impression of change; TTRS: Tear Trough Rating Scales.