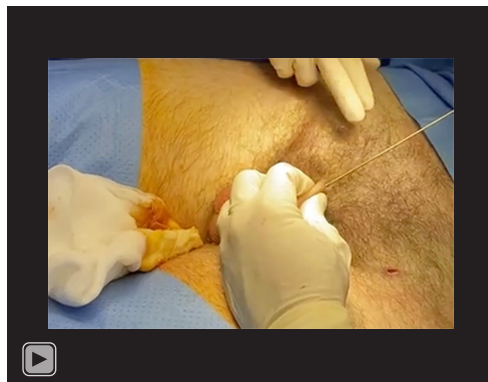




Video S1 Key procedure steps: lipoaspiration, SVF isolation, fat injection enriched with SVF, and manual molding. SVF, stromal vascular fraction.

Table S1 Baseline characteristics for the mild erectile dysfunction subcohort

Variable	Coleman fat (n=10)	SVF fat (n=17)	Test statistics	P value
Age, years, mean (SD)	42.8 (12.4)	45.9 (11.7)	71.500	0.511
BMI, kg/m ² , mean (SD)	28.6 (4.4)	28.3 (3.9)	89.500	0.840
Comorbidities, n (%)				
Hypertension	1 (10.0)	2 (11.8)	0.000	>0.99
Obesity	4 (40.0)	8 (47.1)	0.000	>0.99
Type II diabetes mellitus	4 (40.0)	2 (11.8)	1.500	0.221
Has a regular sexual partner, n (%)	7 (70.0)	15 (88.2)	0.442	0.506
Heterosexual orientation, n (%)	10 (100.0)	16 (94.1)	0.000	>0.99
IIEF-5 scores, points, mean (SD)	18.800 (1.135)	19.647 (1.222)	47.500	0.055
Full IIEF domain scores, points, mean (SD)				
A—erectile function, max 30 points	23.900 (0.994)	23.588 (1.004)	101.000	0.417
B—orgasmic function, max 10 points	7.400 (0.966)	7.588 (1.228)	75.500	0.639
C—sexual desire, max 10 points	6.400 (1.075)	6.176 (1.185)	96.000	0.584
D—intercourse satisfaction, max 15 points	5.500 (1.434)	5.588 (1.372)	81.500	0.877
E—overall satisfaction, max 10 points	5.800 (1.619)	5.706 (1.759)	88.500	0.876

Statistical comparisons were performed using the Pearson χ^2 test for categorical variables and the Mann-Whitney U test for ordinal variables. Baseline characteristics of the whole cohort are presented in Table 1. IIEF, International Index of Erectile Function; IIEF-5, International Index of Erectile Function—the 5-item version; max, maximum; n, number; SD, standard deviation; SVF, stromal vascular fraction.

Table S2 Linear mixed-effects model analysis of flaccid penile circumference

Term	β	SE	95% CI		z-value	P value	χ^2	df
			Lower	Upper				
Mixed linear model fixed effects								
Intercept	9.216	0.071	9.076	9.355	129.492	<1.000E-300*	–	–
Group: SVF vs. Coleman	–0.092	0.094	–0.277	0.093	–0.972	0.331	–	–
Time: 1 month vs. baseline	3.192	0.037	3.120	3.264	87.248	<1.000E-300*	–	–
Time: 3 months vs. baseline	2.734	0.037	2.663	2.806	74.733	<1.000E-300*	–	–
Time: 6 months vs. baseline	1.753	0.037	1.681	1.824	47.904	<1.000E-300*	–	–
Time: 12 months vs. baseline	1.611	0.037	1.539	1.682	44.020	<1.000E-300*	–	–
Group $\times$ time: SVF at 1 month	0.232	0.049	0.137	0.327	4.778	1.774E-06*	–	–
Group $\times$ time: SVF at 3 months	0.444	0.049	0.349	0.539	9.143	6.062E-20*	–	–
Group $\times$ time: SVF at 6 months	1.119	0.049	1.024	1.215	23.062	1.118E-117*	–	–
Group $\times$ time: SVF at 12 months	1.183	0.049	1.088	1.279	24.383	2.615E-131*	–	–
Omnibus Wald χ^2 tests for fixed effects in the linear mixed model								
Group	–	–	–	–	–	0.331	0.945	1
Time	–	–	–	–	–	<1.000E-300*	9,072.448	4
Group $\times$ Time	–	–	–	–	–	2.368E-206*	959.291	4

Random intercept variance =0.167, residual variance =0.025, intraclass correlation coefficient =0.868. *, statistically significant differences ($P \leq 0.05$). Coleman fat n=38, SVF fat n=50. CI, confidence interval; df, degrees of freedom; n, number; SE, standard error; SVF, stromal vascular fraction; β , regression coefficient; χ^2 , Wald statistic.

Table S3 Between-group comparison of flaccid penile circumference

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Absolute values, cm									
Before	9.216	0.420	9.124	0.383	1089.000	1.171	0.016	0.242	>0.99
After 1 month	12.408	0.488	12.548	0.509	808.000	–1.196	0.016	0.233	>0.99
After 3 months	11.950	0.459	12.302	0.455	592.500	–3.012	0.103	0.003	0.013*
After 6 months	10.968	0.427	11.996	0.381	51.500	–7.569	0.651	3.7E-14	1.85E-13*
After 12 months	10.826	0.428	11.918	0.427	63.500	–7.468	0.634	8.07E-14	4.03E-13*
Change (Δ after-before), cm									
Δ 1 month	3.192	0.355	3.424	0.330	577.000	–3.142	0.112	0.002	0.006*
Δ 3 months	2.734	0.322	3.178	0.291	244.000	–5.947	0.402	2.27E-09	9.08E-09*
Δ 6 months	1.753	0.237	2.872	0.199	0.000	–8.003	0.728	9.14E-16	3.66E-15*
Δ 12 months	1.611	0.209	2.794	0.265	0.000	–8.003	0.728	1.02E-15	4.08E-15*

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat n=38, SVF fat n=50. adj P, adjusted P value; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.

Table S4 Linear mixed-effects model analysis of erect penile circumference

Term	β	SE	95% CI		z-value	P value	χ^2	df
			Lower	Upper				
Mixed linear model fixed effects								
Intercept	11.239	0.116	11.013	11.466	97.095	<1.000E–300*	–	–
Group: SVF vs. Coleman	0.045	0.154	–0.256	0.346	0.290	0.772	–	–
Time: 1 month vs. baseline	2.100	0.033	2.034	2.166	62.812	<1.000E–300*	–	–
Time: 3 months vs. baseline	1.734	0.033	1.669	1.800	51.871	<1.000E–300*	–	–
Time: 6 months vs. baseline	1.137	0.033	1.071	1.202	34.004	1.967E–253*	–	–
Time: 12 months vs. baseline	1.013	0.033	0.948	1.079	30.304	1.010E–201*	–	–
Group $\times$ time: SVF at 1 month	0.140	0.044	0.053	0.227	3.156	0.002*	–	–
Group $\times$ time: SVF at 3 months	0.366	0.044	0.279	0.453	8.247	1.623E–16*	–	–
Group $\times$ time: SVF at 6 months	0.777	0.044	0.690	0.864	17.522	9.770E–69*	–	–
Group $\times$ time: SVF at 12 months	0.843	0.044	0.756	0.930	19.003	1.620E–80*	–	–
Omnibus Wald χ^2 tests for fixed effects in the linear mixed model								
Group	–	–	–	–	–	0.772	0.084	1
Time	–	–	–	–	–	<1.000E–300*	4606.047	4
Group $\times$ Time	–	–	–	–	–	9.073E–123*	573.349	4

Random intercept variance =0.488, residual variance =0.021, intraclass correlation coefficient =0.958. *, statistically significant differences ($P \leq 0.05$). Coleman fat n=38, SVF fat n=50. CI, confidence interval; df, degrees of freedom; n, number; SE, standard error; SVF, stromal vascular fraction; β , regression coefficient; χ^2 , Wald statistic.

Table S5 Between-group comparison statistics for erect penile circumference

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Absolute values, cm									
Before	11.239	0.644	11.284	0.769	893.500	–0.476	0.003	0.636	>0.99
After 1 month	13.339	0.654	13.524	0.789	793.500	–1.318	0.020	0.188	0.942
After 3 months	12.974	0.598	13.384	0.775	638.000	–2.628	0.078	0.009	0.043*
After 6 months	12.376	0.578	13.198	0.780	383.500	–4.772	0.259	1.83E–06	9.14E–06*
After 12 months	12.253	0.593	13.140	0.789	351.000	–5.046	0.289	4.51E–07	2.26E–06*
Change (Δ after-before), cm									
Δ 1 month	2.100	0.327	2.240	0.294	734.500	–1.815	0.037	0.068	0.272
Δ 3 months	1.734	0.360	2.100	0.270	356.000	–5.004	0.285	4.87E–07	1.95E–06*
Δ 6 months	1.137	0.248	1.914	0.229	16.000	–7.868	0.703	2.95E–15	1.18E–14*
Δ 12 months	1.013	0.216	1.856	0.233	1.000	–7.994	0.726	9.66E–16	3.86E–15*

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat n=38, SVF fat n=50. adj P, adjusted P value; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.

Table S6 Linear mixed-effects model analysis of flaccid penile length

Term	β	SE	95% CI		z-value	P value	χ^2	df
			Lower	Upper				
Mixed linear model fixed effects								
Intercept	8.858	0.119	8.625	9.091	74.534	<1.000E-300*	–	–
Group: SVF vs. Coleman	–0.112	0.158	–0.421	0.197	–0.710	0.478	–	–
Time: 1 month vs. baseline	1.045	0.025	0.995	1.094	41.398	<1.000E-300*	–	–
Time: 3 months vs. baseline	0.897	0.025	0.848	0.947	35.559	6.088E-277*	–	–
Time: 6 months vs. baseline	0.650	0.025	0.601	0.699	25.757	2.717E-146*	–	–
Time: 12 months vs. baseline	0.558	0.025	0.508	0.607	22.107	2.713E-108*	–	–
Group $\times$ time: SVF at 1 month	0.129	0.033	0.064	0.195	3.861	1.129E-04*	–	–
Group $\times$ time: SVF at 3 months	0.205	0.033	0.139	0.270	6.112	9.832E-10*	–	–
Group $\times$ time: SVF at 6 months	0.388	0.033	0.322	0.454	11.589	4.678E-31*	–	–
Group $\times$ time: SVF at 12 months	0.420	0.033	0.354	0.486	12.548	4.072E-36*	–	–
Omnibus Wald χ^2 tests for fixed effects in the linear mixed model								
Group	–	–	–	–	–	0.478	0.504	1
Time	–	–	–	–	–	<1.000E-300*	2028.655	4
Group $\times$ Time	–	–	–	–	–	5.042E-47*	222.650	4

Random intercept variance =0.525, residual variance =0.012, intraclass correlation coefficient =0.977. *, statistically significant differences ($P \leq 0.05$). Coleman fat n=38, SVF fat n=50. CI, confidence interval; df, degrees of freedom; n, number; SE, standard error; SVF, stromal vascular fraction; β , regression coefficient; χ^2 , Wald statistic.

Table S7 Between-group comparison of flaccid penile length

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Absolute values, cm									
Before	8.858	0.594	8.746	0.769	1005.500	0.468	0.002	0.643	>0.99
After 1 month	9.903	0.632	9.920	0.833	892.000	–0.489	0.003	0.628	>0.99
After 3 months	9.755	0.642	9.848	0.823	814.500	–1.141	0.015	0.255	>0.99
After 6 months	9.508	0.618	9.784	0.806	697.000	–2.131	0.052	0.033	0.165
After 12 months	9.416	0.606	9.724	0.809	674.500	–2.321	0.061	0.020	0.102
Change (Δ after-before), cm									
Δ 1 month	1.045	0.262	1.174	0.218	709.000	–2.030	0.047	0.041	0.162
Δ 3 months	0.897	0.271	1.102	0.191	518.500	–3.635	0.150	2.44E-04	0.001*
Δ 6 months	0.650	0.206	1.038	0.184	125.500	–6.946	0.548	2.45E-12	9.81E-12*
Δ 12 months	0.558	0.184	0.978	0.190	89.500	–7.249	0.597	2.90E-13	1.16E-12*

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat n=38, SVF fat n=50. adj P, adjusted P value; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.

Table S8 Linear mixed-effects model analysis of erect penile length

Term	β	SE	95% CI		z-value	P value	χ^2	df
			Lower	Upper				
Mixed linear model fixed effects								
Intercept	12.495	0.218	12.067	12.922	57.307	<1.000E-300*	–	–
Group: SVF vs. Coleman	–0.227	0.289	–0.794	0.340	–0.784	0.433	–	–
Time: 1 month vs. baseline	0.776	0.029	0.720	0.832	27.089	1.345E-161*	–	–
Time: 3 months vs. baseline	0.663	0.029	0.607	0.719	23.140	1.833E-118*	–	–
Time: 6 months vs. baseline	0.479	0.029	0.423	0.535	16.712	1.068E-62*	–	–
Time: 12 months vs. baseline	0.397	0.029	0.341	0.454	13.866	1.023E-43*	–	–
Group $\times$ time: SVF at 1 month	0.112	0.038	0.037	0.186	2.938	0.003*	–	–
Group $\times$ time: SVF at 3 months	0.169	0.038	0.094	0.243	4.441	8.958E-06*	–	–
Group $\times$ time: SVF at 6 months	0.313	0.038	0.239	0.388	8.234	1.812E-16*	–	–
Group $\times$ time: SVF at 12 months	0.357	0.038	0.282	0.431	9.380	6.588E-21*	–	–
Omnibus Wald χ^2 tests for fixed effects in the linear mixed model								
Group	–	–	–	–	–	0.433	0.614	1
Time	–	–	–	–	–	6.010E-187*	869.735	4
Group $\times$ Time	–	–	–	–	–	1.161E-24*	118.421	4

Random intercept variance =1.791, residual variance =0.016, intraclass correlation coefficient =0.991. *, statistically significant differences ($P \leq 0.05$). Coleman fat n=38, SVF fat n=50. CI, confidence interval; df, degrees of freedom; n, number; SE, standard error; SVF, stromal vascular fraction; β , regression coefficient; χ^2 , Wald statistic.

Table S9 Between-group comparison of erect penile length

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Absolute values, cm									
Before	12.495	1.370	12.268	1.304	1031.000	0.682	0.005	0.498	>0.99
After 1 month	13.271	1.387	13.156	1.303	970.500	0.173	0.000	0.866	>0.99
After 3 months	13.158	1.403	13.100	1.305	946.000	–0.034	0.000	0.976	>0.99
After 6 months	12.974	1.398	13.060	1.313	907.500	–0.358	0.001	0.723	>0.99
After 12 months	12.892	1.394	13.022	1.315	894.500	–0.468	0.002	0.643	>0.99
Change (Δ after-before), cm									
Δ 1 month	0.776	0.288	0.888	0.288	724.000	–1.904	0.041	0.056	0.223
Δ 3 months	0.663	0.275	0.832	0.262	620.500	–2.776	0.088	0.005	0.021*
Δ 6 months	0.479	0.211	0.792	0.239	308.000	–5.408	0.332	5.37E-08	2.15E-07*
Δ 12 months	0.397	0.182	0.754	0.256	251.000	–5.888	0.394	3.18E-09	1.27E-08*

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat n=38, SVF fat n=50. adj P, adjusted P value; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.

Table S10 Linear mixed-effects model analysis of IIEF-5 scores (whole cohort)

Term	β	SE	95% CI		z-value	P value	χ^2	df
			Lower	Upper				
Mixed linear model fixed effects								
Intercept	22.211	0.258	21.705	22.716	86.161	<1.000E-300*	–	–
Group: SVF vs. Coleman	–0.131	0.342	–0.801	0.540	–0.382	0.703	–	–
Time: 1 month vs. baseline	0.316	0.204	–0.084	0.716	1.548	0.122	–	–
Time: 3 months vs. baseline	0.368	0.204	–0.031	0.768	1.806	0.071	–	–
Time: 6 months vs. baseline	0.421	0.204	0.021	0.821	2.064	0.039*	–	–
Time: 12 months vs. baseline	0.184	0.204	–0.216	0.584	0.903	0.367	–	–
Group $\times$ time: SVF at 1 month	–0.096	0.271	–0.626	0.435	–0.354	0.723	–	–
Group $\times$ time: SVF at 3 months	0.472	0.271	–0.059	1.002	1.743	0.081	–	–
Group $\times$ time: SVF at 6 months	0.819	0.271	0.289	1.349	3.026	0.002*	–	–
Group $\times$ time: SVF at 12 months	1.016	0.271	0.485	1.546	3.753	1.744E-04*	–	–
Omnibus Wald χ^2 tests for fixed effects in the linear mixed model								
Group	–	–	–	–	–	0.703	0.146	1
Time	–	–	–	–	–	0.241	5.485	4
Group $\times$ Time	–	–	–	–	–	2.982E-05*	26.128	4

Random intercept variance =1.734, residual variance =0.791, intraclass correlation coefficient =0.687. *, statistically significant differences ($P \leq 0.05$). Coleman fat n=38, SVF fat n=50. CI, confidence interval; df, degrees of freedom; n, number; IIEF-5, International Index of Erectile Function—the 5-item version; SE, standard error; SVF, stromal vascular fraction; β , regression coefficient; χ^2 , Wald statistic.

Table S11 Between-group comparison of IIEF-5 scores (whole cohort)

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Absolute values, points									
Before	22.211	2.268	22.080	2.059	1017.500	0.569	0.004	0.566	>0.99
After 1 month	22.526	1.589	22.300	1.832	999.500	0.417	0.002	0.674	>0.99
After 3 months	22.579	1.553	22.920	1.209	834.000	–0.977	0.011	0.318	>0.99
After 6 months	22.632	1.460	23.320	0.999	719.500	–1.942	0.043	0.043	0.215
After 12 months	22.395	1.653	23.280	0.904	674.500	–2.321	0.061	0.016	0.081
Change (Δ after-before), points									
Δ 1 month	0.316	1.141	0.220	0.545	926.500	–0.198	0.000	0.812	>0.99
Δ 3 months	0.368	1.261	0.840	1.570	778.000	–1.449	0.024	0.121	0.485
Δ 6 months	0.421	1.368	1.240	1.954	739.500	–1.773	0.036	0.057	0.228
Δ 12 months	0.184	1.136	1.200	1.959	707.000	–2.047	0.048	0.028	0.111

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat n=38, SVF fat n=50. adj P, adjusted P value; IIEF-5, International Index of Erectile Function—the 5-item version; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.

Table S12 Between-group comparison of IIEF-5 scores (mild erectile dysfunction subcohort)

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Absolute values, points									
Before	18.800	1.135	19.647	1.222	47.500	−1.883	0.131	0.055	0.277
After 1 month	20.500	1.080	20.176	1.131	93.500	0.427	0.007	0.669	>0.99
After 3 months	20.700	0.949	22.235	1.300	31.000	−2.711	0.272	0.006	0.030*
After 6 months	21.000	1.491	23.294	0.920	17.000	−3.414	0.432	4.70E−04	0.002*
After 12 months	20.200	0.789	23.294	0.920	0.000	−4.268	0.675	1.54E−05	7.71E−05*
Change (Δ after-before), points									
Δ 1 month	1.700	1.160	0.529	0.717	134.000	2.460	0.224	0.010	0.039*
Δ 3 months	1.900	1.370	2.588	1.372	62.000	−1.155	0.049	0.249	0.994
Δ 6 months	2.200	1.135	3.647	1.320	35.000	−2.510	0.233	0.011	0.044*
Δ 12 months	1.400	1.174	3.647	1.272	18.000	−3.364	0.419	0.001	0.003*

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat $n=10$, SVF fat $n=17$. adj P, adjusted P value; IIEF-5, International Index of Erectile Function—the 5-item version; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.

Table S13 Between-group comparison of full IIEF scores (mild erectile dysfunction subcohort)

Time parameter	Coleman fat		SVF fat		Mann-Whitney statistics				
	Mean	SD	Mean	SD	U	z-value	η^2	P value	adj P
Domain A—Erectile Function (max 30 points)									
Before	23.900	0.994	23.588	1.004	101.000	0.803	0.024	0.417	>0.99
After 12 months	23.900	1.197	26.176	1.237	17.000	−3.414	0.432	0.001	0.002*
Δ after-before	0.000	0.667	2.588	1.417	10.000	−3.766	0.525	1.16E−04	3.49E−04*
Domain B—Orgasmic Function (max 10 points)									
Before	7.400	0.966	7.588	1.228	75.500	−0.477	0.008	0.639	>0.99
After 12 months	7.200	0.789	7.824	1.185	57.000	−1.406	0.073	0.153	0.459
Δ after-before	−0.200	0.919	0.235	0.437	62.500	−1.130	0.047	0.185	0.554
Domain C—Sexual Desire (max 10 points)									
Before	6.400	1.075	6.176	1.185	96.000	0.552	0.011	0.584	>0.99
After 12 months	6.600	1.350	6.412	1.176	97.000	0.603	0.013	0.553	>0.99
Δ after-before	0.200	0.632	0.235	0.664	86.000	0.050	0.000	0.976	>0.99
Domain D—Intercourse Satisfaction (max 15 points)									
Before	5.500	1.434	5.588	1.372	81.500	−0.176	0.001	0.877	>0.99
After 12 months	5.600	1.350	6.765	1.562	48.500	−1.833	0.124	0.064	0.192
Δ after-before	0.100	0.568	1.176	1.510	51.500	−1.682	0.105	0.062	0.186
Domain E—Overall Satisfaction (max 10 points)									
Before	5.800	1.619	5.706	1.759	88.500	0.176	0.001	0.876	>0.99
After 12 months	6.200	1.751	7.765	1.251	45.000	−2.008	0.149	0.043	0.128
Δ after-before	0.400	0.843	2.059	1.676	35.500	−2.485	0.229	0.012	0.036*

*, statistically significant differences ($P \leq 0.05$ Bonferroni-adjusted; 2-sided Mann-Whitney test). Coleman fat $n=10$, SVF fat $n=17$. adj P, adjusted P value; full IIEF, International Index of Erectile Function—full version; max, maximum; n, number; SD, standard deviation; SVF, stromal vascular fraction; U, Mann-Whitney U statistics; η^2 , effect size.