

**Objectives:** To analyze the clinical outcome of guided bone regeneration (GBR) with a newly developed dense-polytetrafluoroethylene (d-PTFE) membrane.

**Materials and methods:** Twenty consecutive GBR procedures were performed in 18 consenting patients, 8 males and 10 females, mean age 49,5 years (range 21-75), from January 2010 till October 2011, utilizing a d-PTFE membrane (Cytoplast) with or without titanium reinforcement, and a graft of particulated autogenous bone or deproteinized bovine bone mineral (Bio-Oss) or nanocrystalline hydroxyapatite embedded in a silica gel matrix (Nanobone) alone or mixed together. Twenty implants (10 Camlog, 9 Straumann, 1 Alpha-Bio) were placed at the time of GBR in 16 procedures. A staged approach, with 6 implant placement (5 Camlog, 1 Straumann) at the time of membrane removal, was performed in 4 procedures.

## SIMULTANEOUS APPROACH

PATIENT	GENDER/AGE	SMOKE	IMPLANT SYSTEM	IMPLANT POSITION	KIND OF MEMBRANE	GRAFT MATERIAL	TIME AT REENTRY	DEFECT	GRAFT	MEMBRANE APPLICATION	SUTURE	TISSUES AT REENTRY	REGENERATED SITE
F.M.T.	F/64	N	STRAUMANN BONE LEVEL	14-15-16	TI-250 PS	AUTOLOG + BIO-OSS	27 WEEKS						
D.M.A.	F/75	N	CAMLOG SCREW LINE	22	TI-250 AN	BIO-OSS	19 WEEKS						
S.E.	M/45	N	ALPHA-BIO DFI	24	TXT 1220	AUTOLOG + NANO BONE	46 WEEKS						
P.L.	F/55	N	CAMLOG SCREW LINE	12	TXT 1220	NANO BONE	35 WEEKS						
S.E.	M/45	N	CAMLOG SCREW LINE	14	TXT 1220	AUTOLOG	30 WEEKS						
C.L.	F/61	N	CAMLOG SCREW LINE	12	TXT 1220	BIO-OSS	30 WEEKS						
C.L.	F/61	N	CAMLOG SCREW LINE	23	TXT 1220	BIO-OSS	30 WEEKS						
M.C.	M/49	N	STRAUMANN BONE LEVEL	44-45-46	TI-250 PS	AUTOLOG + NANO BONE	29 WEEKS						
L.L.	F/45	N	CAMLOG SCREW LINE	22	TXT 1220	AUTOLOG + NANO BONE	32 WEEKS						
G.E.	M/21	Y	CAMLOG SCREW LINE	36	TI 250 BL	AUTOLOG + BIO-OSS	12 WEEKS						
CH.R.	M/50	N	STRAUMANN BONE LEVEL	14	TI 250 BL	AUTOLOG	21 WEEKS						
D.V.F.	F/35	N	STRAUMANN BONE LEVEL	23	TI 250 BL	AUTOLOG + BIO-OSS	34 WEEKS						
P.A.	M/43	Y	CAMLOG SCREW LINE	46	TXT 1224	AUTOLOG + BIO-OSS	27 WEEKS						
E.M.	F/46	N	CAMLOG SCREW LINE	35	TXT 1220	AUTOLOG + BIO-OSS	27 WEEKS						
Z.F.	M/62	N	CAMLOG SCREW LINE	21	TXT 1220	AUTOLOG + BIO-OSS	26 WEEKS						
D.S.M.	M/64	N	STRAUMANN BONE LEVEL	23	TXT 1220	BIO-OSS	24 WEEKS						

## STAGED APPROACH

PATIENT	GENDER/AGE	SMOKE	IMPLANT SYSTEM	IMPLANT POSITION	KIND OF MEMBRANE	GRAFT MATERIAL	TIME AT REENTRY	DEFECT	GRAFT	MEMBRANE APPLICATION	SUTURE	TISSUES AT REENTRY	REGENERATED SITE
M.P.	F/22	N	CAMLOG SCREW LINE	26	TI 250 BL	NANO BONE	44 WEEKS						
S.R.R.	F/49	N	STRAUMANN TISSUE LEVEL	36	TXT 2530	AUTOLOG	31 WEEKS						
M.G.	M/56	N	CAMLOG SCREW LINE	43-45-46	TI 250 PL	AUTOLOG + NANO BONE	30 WEEKS						
CI.R.	F/49	Y	CAMLOG SCREW LINE	22	TXT 1220	BIO-OSS	22 WEEKS						

**Results:** All GBR procedures but one healed uneventfully. Only 1 late exposure of the membrane happened in a single simultaneous implant placement procedure after 11 weeks. The membrane was removed 1 week after the exposure and no sign of inflammation or infection was observed beneath the membrane within the regenerated bone. The other 19 membranes were removed after a 29,7 week healing period (range 19-44). All 26 implants were osseointegrated and completely surrounded by regenerated bone. Graft material did not affect the clinical outcome, while the limited number of treated cases did not allow statistical analysis within the groups.

**Conclusions:** This preliminary report of an ongoing study indicates that d-PTFE membranes may be used with high predictability (95% procedure's success, 100% implant survival and success) in GBR procedures. The only one late exposure did not cause wound infection.