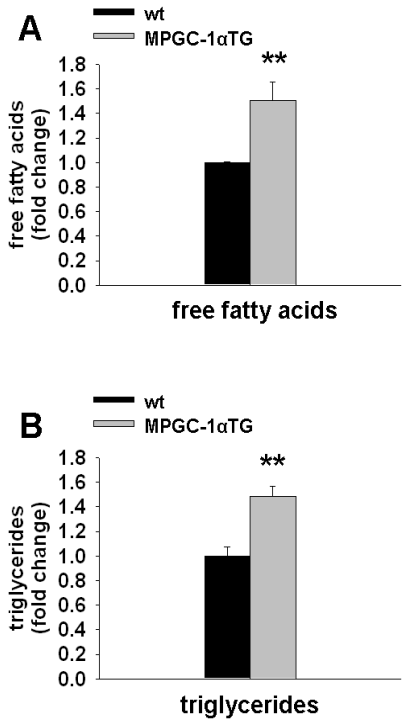
# Supplementary Material

Supplementary Table T1

| | FORWARD | REVERSE |
|---|---|---|
| *mTBP* | ATATAATCCCAAGCGATTTGC | GTCCGTGGCTCTCTTATTCTC |
| *hTBP* | GCCATAAGGCATCATTGGAC | AACAACAGCCTGCCACCTTA |
| *mGLUT1* | CGAGGGACAGCCGATGTG | TGCCGACCCTCTTCTTTCAT |
| *mGLUT4* | GATGAGAAACGGAAGTTGGAGAGA | GCACCACTGCGATGATCAGA |
| *mHK* | CCCTGCCACCAGACGAAA | GACTTGAACCCCTTAGTCCATGA |
| *mG6PDH* | AGGTGACCCTAAGCCGGAC | AGGTTTCTTTGGGTAGAAGACCA |
| *mRiboRed* | CTGCTCAGATCACCATGAAAGT | TGCTTCGTGGTCAAGGTCG |
| *mFAS* | CGGAAACTTCAGGAAATGTCC | TCAGAGACGTGTCACTCCTGG |
| *hFAS* | TGTGGACATGGTCACGGAC | GGCATCAAACCTAGACAGGTC |
| *mFAT/CD36* | TGGCCTTACTTGGGATTGG | CCAGTGTATATGTAGGCTCATCCA |
| *mFABPpm* | AGCGGCTGACCAAGGAGTT | GACCCCTGCCACGGAGAT |
| *mFATP1* | GGCTCCTGGAGCAGGAACA | ACGGAAGTCCCAGAAACCAA |
| *mFATP3* | CAGCTCTACAGCCATGTTTCTGA | CAAAGATTCCTGGAGCCTGAGA |
| *mFATP4* | GGCTTCCCTGGTGTACTATGGAT | ACGATGTTTCCTGCTGAGTGGTA |
| *mFATP6* | GGCTTGAGGATGCCGCTTA | GTACTCTGGGCTCATGCTATGAAGT |
| *mLPL* | GGGAGTTTGGCTCCAGAGTTT | TGTGTCTTCAGGGGTCCTTAG |
| *mDGAT* | TCCGTCCAGGGTGGTAGTG | TGAACAAAGAATCTTGCAGACGA |
| *mtGPAT* | ACAGTTGGCACAATAGACGTTT | CCTTCCATTTCAGTGTTGCAGA |
| *mACS* | CTCACCATTATATTGCTGCCTGT | TCTCTTTGCCATAGCGTTTTTCT |
| *hACS* | AAAAGCTAAGCCCACTTCAGAC | ACTTGGATACAGCATGGTCAAAT |
| *mLXR alpha* | GGGAGGAGTGTGTGCTGTCAG | GAGCGCCTGTTACACTGTTGC |
| *hLXR alpha* | CATGGCACCAGATCCCCATAG | GGGTAGCTGTTTAGCAAAGTCAA |
| *mLXR beta* | GGCCTGGACGATGCAGAGT | CGATCGGCTGAGAAGATGTTG |
| *mRXR alpha* | AACCCCAGCTCACCAAATGACC | AACAGGACAATGGCTCGCAGG |
| *hRXR alpha* | TTCGCTAAGCTCTTGCTC | ATAAGGAAGGTGTCAATGGG |
| *mRXR beta* | GCCAAGCTGCTGTTACGTCTT | ACAGGTGCTCCAGACACTTGAG |
| *hRXR beta* | GAAGCTCAGGAAACACTAC | TGCAGTCTTTGTTGTCCC |
| *mRXR gamma* | CCGCTGCCAGTACTGTCG | ACCTGGTCCTCCAAGGTGAG |
| *mSREBP1c* | GCATGCCATGGGCAAGTAC | CCACATAGATCTCTGCCAGTGTTG |
| *mLipin* | CTCCGCTCCCGAGAGAAAG | TCATGTGCAAATCCACGGACT |
| *hGLUT4* | CTCAGCAGCGAGTGACTGG | CCCCAATGTTGTACCCAAACTG |
| *hHK* | GAGCCACCACTCACCCTACT | ACCCAAAGCACACGGAAGTT |
| *hG6PDH* | CAAACAGAGTGAGCCCTTCTTC | CTCATGCAGGACTCGTGAATG |

**Supplementary Table T1**
Sequences of primers used for RT-PCR.
m, mouse-specific primers; h, human-specific primers.

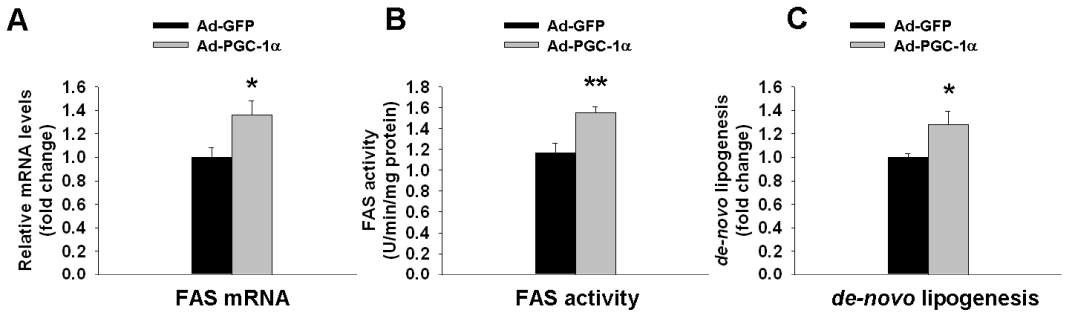
Supplementary Figure S1




**Supplementary Figure S1. Incorporation of *de-novo* synthesized lipids into different lipid components.**

(**A** and **B**) Tritium labeled free fatty acids (**A**) and triglycerides (**B**) in glycolytic muscle of MPGC-1α TG mice *vs.* controls. All values are means ±SE. (n=5 per group). ** $p<0.01$.

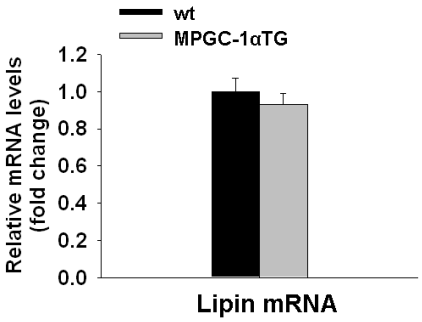
Supplementary Figure S2




**Supplementary Figure S2. Enhanced lipid anabolism in isolated muscle cells overexpressing PGC-1α.**

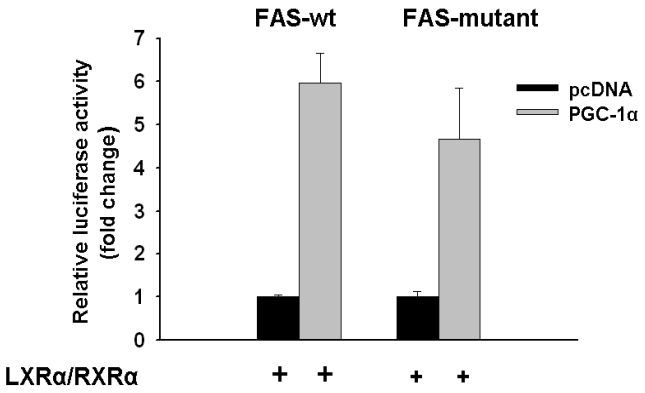
(**A-C**) FAS gene expression (**A**), activity (**B**) and *de-novo* lipogenesis (**C**) in isolated muscle cells overexpressing either GFP (control), or PGC-1α. All values are means ±SE. (n=8 per group). * $p<0.05$; ** $p<0.01$.

Supplementary Figure S3



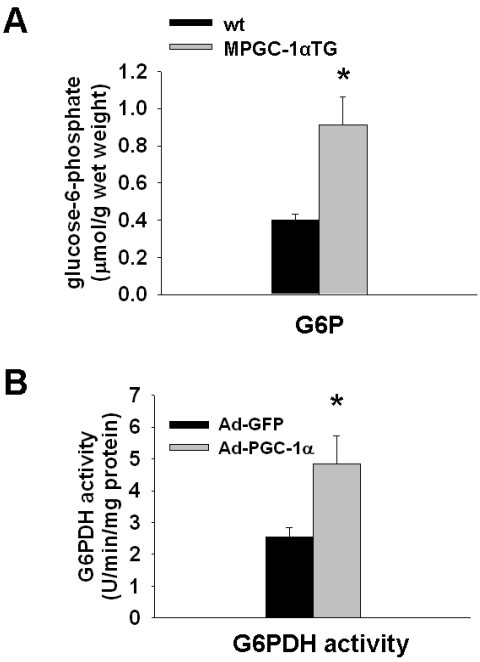

**Supplementary Figure S3. Lipin gene expression**
Relative gene expression of lipin in EDL as measured by RT-PCR and expressed as fold change over controls.

Supplementary Figure S4




**Supplementary Figure S4. Luciferase assay**
Promoter activity of the FAS wild-type promoter (FAS-wt) and of a SREBP_binding mutant (FAS-mutant) following transfection of myoblasts with pcDNA (empty vector) (black bars) or PGC-lα (grey bars). LXRα/RXRα expression plasmids were cotransfected for all assays.
Values are expressed as means ±SE (n =6 per group)

Supplementary Figure S5

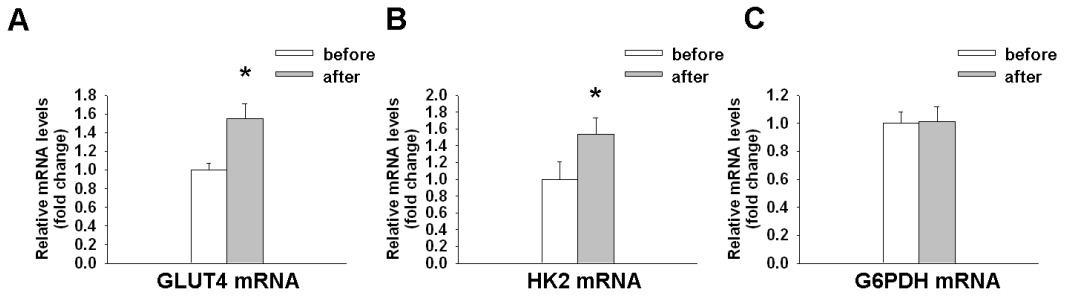



**Supplementary Figure S5. Increased Glucose-6-phosphate levels in muscle and elevated G6PDH activity in isolated muscle cells overexpressing PGC-1α.**

(**A**) Glucose-6-phosphate (G6P) levels in glycolytic muscles of MPGC-1α TG mice *vs.* controls. All values are means ±SE. (n=5-6 per group). * $p<0.05$.

(**B**) G6PDH activity in isolated muscle cells overexpressing either GFP (control), or PGC-1α. All values are means ±SE. (n=6 per group). * $p<0.05$.

Supplementary Figure S6




**Supplementary Figure S6. GLUT4, HK2 and G6PDH mRNA levels in endurance athletes pre- and post-exercise.**
(**A-C**) Relative expression of GLUT4 (**A**), HK2 (**B**) and G6PDH (**C**) in human muscle biopsies pre- and post-exercise. Mean values are expressed as bars with SE (n=6). * $p<0.05$ as assessed by paired *t*-test.